International Bulletin on Atomic and Molecular Data for Fusion

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Foreword

The **International Bulletin on Atomic and Molecular Data for Fusion** is prepared by the Atomic and Molecular Data Unit, **International Atomic Energy Agency** (IAEA), and published and distributed free of charge by the **IAEA** to assist in the development of fusion research and technology.

The references and indices included in the Bulletin are provided by atomic data centres at the following institutions:

Oak Ridge National Laboratory, Oak Ridge, USA,
National Institute for Standards and Technology, Gaithersburg, USA,
Kurchatov Institute, Moscow, Russian Federation,
National Institute for Fusion Science, Toki-shi, Japan,
Universite de Paris XI, Paris-Sud, Orsay, France,
Nuclear Data Section, IAEA, Vienna, Austria.

Information in this Bulletin is presented in four parts. The Atomic and Molecular Data Information System (AMDIS) of the International Atomic Energy Agency is presented in Part 1. The indexed papers are listed separately for structure and spectra, atomic and molecular collisions, and surface interactions in Part 2. The structure and spectra index lines are grouped by process. The first column gives the reactants, the second one the process and then the character of the data contained (Th for theoretical, Ex for experimental, and E/T for both experimental and theoretical). The number in the last column is the reference number in Part 3 of the Bulletin. The atomic and molecular index lines are grouped by one collision partner (photon, electron or heavy particle). The first column gives the reactants, the second column gives the process, the third column gives the energy range with the appropriate units, and the last two columns are the same as in the structure and spectra index lines. The particle-surface interactions index lines are grouped by process. The first column gives the reactants, the second the energy range with the appropriate units, and the last two columns are the same as in the previous cases. Part 3 contains all the bibliographic data for both the indexed and non-indexed references. Those references which are indexed in Part 1 are identified by the repeated index lines. The Author Index (Part 4) refers to the bibliographic references contained in Part 3.

Contributions are solicited on data generation work in progress and on new data in the course of publication. Contributions should include an explanation of their applicability to fusion research and should be sent to:

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All data published in the Bulletin are included in AMBDAS, the IAEA Atomic and Molecular Data Unit bibliographic database. AMBDAS is freely available on line at http://www-amdis.iaea.org/AMBDAS.

Vienna, December 2009 The Editors

News on the Atomic and Molecular Data Unit

This edition of the Bulletin contains a large amount of data due to the recovery of missing data from the year 1953 by the Data Centres at the Oak Ridge National Laboratory (ORNL) and the National Institute of Standards and Technology (NIST).

The A+M Data Unit organized a joint ICTP-IAEA workshop on atomic and molecular data for fusion on 20-30 April, 2009 at the ICTP facility in Trieste, Italy. The purpose of the workshop is to train potential new researchers in fusion energy in the basics of atomic, molecular and plasma-material interaction data. Additional information may be found on the ICTP web site at:

http://www-amdis.iaea.org/ICTP2009/

Co-ordinated Reasearch Projects (CRP) are the main tool by which the Atomic and Molecular Data Unit (AMD Unit) collects and evaluates data for the establishment of recommended numerical databases for use in fusion energy research. The AMD unit operates three to four CRPs simultaneously. A CRP is a three to five-year joint project involving approximately 12 laboratories, research teams or institutions, performing coordinated research to achieve a well defined goal (establishment of a particular database, data generation, compilation and assessment for specific types of A+M collision processes, or classes of such processes, etc.). The CRP on "Atomic data for heavy element impurities" held a final RCM on 4-6 March 2009. The CRP on "Data for surface composition dynamics relevant to erosion processes" held a second RCM on 11-13 March 2009. The CRP on "Light Element Atom, Molecule and Radical Behaviour in the Divertor and Edge Plasma Regions" held a first RCM on 18-20 November 2009. The CRP on "Characterization of Size, Composition and Origins of Dust in Fusion Devices" will hold a second RCM in the summer of 2010. More information on the CRPs are available in previous editions of the Bulletin and on the A+M Data Unit web site.

http://www-amdis.iaea.org/CRP/

The 19th meeting of the Data Centre Network on Technical Aspects of Atomic and Molecular Data Processing and Exchange was held on 7-9 September 2009. The A+M/PMI Data Centre Network (DCN) includes about 15 national data centres for collection, critical assessment (evaluation) and partly for generation of atomic and molecular (A+M), particle surface interaction (PSI) and bulk material properties (plasma-material interaction - PMI) data for fusion and other applications. More information on the DCN activities is available on the A+M Data Unit web site.

http://www-amdis.iaea.org/DCN/

The first version (v.0.1) of "XML Schema for Atoms, Molecules and Solids" (XSAMS) has been released on 22 September 2009 after an XSAMS Steering Committee Meeting on 10-11 September 2009. The goal of the XSAMS project is to develop a new XML-based standard for exchange of atomic, molecular and particle-solid(surface)-interaction (AM/PSI) data. This approach allows one to describe both the static properties of the AM/PSI constituents and interactions among them in a consistent and well-structured way. This work is supported by the IAEA in collaboration with the following institutions: NIST, ORNL and Observatoire Paris-Meudon, and progress has been

reported during ICAMDATA meetings. More information is posted on the IAEA A+M Data Unit web site.

http://www-amdis.iaea.org/XML/

The Unit personnel changed in the fall of 2009. R. E. H. Clark retired from IAEA in July and was replaced by B. J. Braams. D. P. Humbert left in August and was replaced by H. K. Chung.

Contents

Chapter 1

The Atomic and Molecular Data Information System

AMDIS is the **A**tomic and **M**olecular **D**ata **I**nformation **S**ystem of the International Atomic Energy Agency, established and maintained by the Atomic and Molecular Data Unit, Nuclear Data Section. AMDIS contains two main parts: AMBDAS, a bibliographic database for atomic and molecular data for fusion research; ALADDIN, a numerical database of recommended and evaluated atomic, molecular and plasma-surface interaction data.

AMBDAS, **A**tomic and **M**olecular **B**ibliographic **D**ata **S**ystem, is an on-line bibliographic database **http://www-amdis.iaea.org/AMBDAS** that contains more than 45,000 bibliographic entries with atomic, molecular and plasma-surface interaction data of interest to fusion research, and dating back to 1950. Entries may be retrieved by author, process, reactants, type of reference, year of publication and data source (theoretical or experimental). The interface is a web-based application, easy to use with no required registration. AMBDAS data are regularly published in the International Bulletin on Atomic and Molecular Data for Fusion.

ALADDIN is the online numerical database of the Atomic and Molecular Data Unit of the IAEA **http://www-amdis.iaea.org/ALADDIN**, providing atomic, molecular and plasma-material interaction data of interest to fusion research. ALADDIN provides two similar interfaces, one for collisional data and one for particle surface interactions. An ALADDIN entry consists of searchable labels that characterize the process and reactants; the source of the data, date, laboratory or data centre, and reference; comment lines and the numerical data. When possible all requested data are displayed in the same units to permit easy comparison. A unit conversion tool is available and all results can be displayed in tabular and graphical mode.

Chapter 2

Process Index

2.1 Structure and Spectra

He^{+}	Energy Levels, Wavelengths	Exp	220
He	Energy Levels, Wavelengths	Exp	227
He	Energy Levels, Wavelengths	Th	240
He^{-}	Energy Levels, Wavelengths	Exp	277
He	Energy Levels, Wavelengths	Th	282
He	Energy Levels, Wavelengths	Th	290
He^{-}	Energy Levels, Wavelengths	Th	327
He	Trans. prob., Oscill. Strengths	Th	365
He	Trans. prob., Oscill. Strengths	Th	406
He	Energy Levels, Wavelengths	Th	480
He	Energy Levels, Wavelengths	Th	499
He	Energy Levels, Wavelengths	Th	545
He	Energy Levels, Wavelengths	Exp	550
He^{-}	Energy Levels, Wavelengths	E/T	565
He	Trans. prob., Oscill. Strengths	E/T	633
He^{+}	Trans. prob., Oscill. Strengths	E/T	633
^{6}Li	Energy Levels, Wavelengths	Th	44
^{7}Li	Energy Levels, Wavelengths	Th	44
^{8}Li	Energy Levels, Wavelengths	Th	44
^{9}Li	Energy Levels, Wavelengths	Th	44
^{11}Li	Energy Levels, Wavelengths	Th	44
Li	Energy Levels, Wavelengths	Th	44
^{6}Li	Energy Levels, Wavelengths	Th	60
^{7}Li	Energy Levels, Wavelengths	Th	60
^{8}Li	Energy Levels, Wavelengths	Th	60
^{9}Li	Energy Levels, Wavelengths	Th	60
^{11}Li	Energy Levels, Wavelengths	Th	60
Li	Energy Levels, Wavelengths	Th	60
Li	Energy Levels, Wavelengths	Th	70
Li^{+}	Energy Levels, Wavelengths	Th	78
^{7}Li	Energy Levels, Wavelengths	Th	82
Li	Energy Levels, Wavelengths	Th	82
Li	Energy Levels, Wavelengths	Exp	84
Li	Energy Levels, Wavelengths	Th	85
Li	Energy Levels, Wavelengths	Th	87
Li	Energy Levels, Wavelengths	Exp	107
Li	Energy Levels, Wavelengths	Exp	123
Li	Energy Levels, Wavelengths	Th	137
^{6}Li	Energy Levels, Wavelengths	Exp	141
^{7}Li	Energy Levels, Wavelengths	Exp	141
Li	Energy Levels, Wavelengths	Exp	141
^{6}Li	Energy Levels, Wavelengths	Exp	142
^{7}Li	Energy Levels, Wavelengths	Exp	142
Li	Energy Levels, Wavelengths	Exp	142
^{7}Li	Energy Levels, Wavelengths	Th	143
Li	Energy Levels, Wavelengths	Th	143
Li	Energy Levels, Wavelengths	Exp	144
^{6}Li	Energy Levels, Wavelengths	Exp	175
^{7}Li	Energy Levels, Wavelengths	Exp	175
Li	Energy Levels, Wavelengths	Exp	175
Li^{+}	Energy Levels, Wavelengths	Exp	180
Li^{-}	Energy Levels, Wavelengths	Th	190
Li^{+}	Energy Levels, Wavelengths	Th	194
Li^{-}	Energy Levels, Wavelengths	Th	197
Li^{-}	Energy Levels, Wavelengths	Th	198
Li	Energy Levels, Wavelengths	Th	198
^{7}Li	Energy Levels, Wavelengths	Th	202

Li	Energy Levels, Wavelengths	Th	202
Li	Energy Levels, Wavelengths	Th	208
^{6}**Li**	Energy Levels, Wavelengths	Exp	215
Li	Energy Levels, Wavelengths	Exp	215
Li	Energy Levels, Wavelengths	Th	218
Li^{0+--2+}	Energy Levels, Wavelengths	Exp	220
Li	Energy Levels, Wavelengths	Th	251
^{6}**Li**	Energy Levels, Wavelengths	Th	275
^{7}**Li**	Energy Levels, Wavelengths	Th	275
Li	Energy Levels, Wavelengths	Th	275
Li	Energy Levels, Wavelengths	Th	326
^{7}**Li**	Trans. prob., Oscill. Strengths	Th	388
Li	Trans. prob., Oscill. Strengths	Th	388
Li	Energy Levels, Wavelengths	Th	459
Li	Energy Levels, Wavelengths	Th	468
Li	Energy Levels, Wavelengths	Th	480
Li	Energy Levels, Wavelengths	Th	505
Li	Energy Levels, Wavelengths	Th	507
Li^{-}	Energy Levels, Wavelengths	E/T	511
Li	Energy Levels, Wavelengths	E/T	511
Li^{+}	Energy Levels, Wavelengths	E/T	511
Li	Energy Levels, Wavelengths	Th	515
Li	Energy Levels, Wavelengths	Exp	522
Li	Energy Levels, Wavelengths	Th	529
Li	Energy Levels, Wavelengths	Exp	557
Li	Energy Levels, Wavelengths	Th	560
Li	Energy Levels, Wavelengths	Exp	563
Li^{-}	Energy Levels, Wavelengths	E/T	565
Li	Trans. prob., Oscill. Strengths	Th	594
Li^{0+--+}	Trans. prob., Oscill. Strengths	Th	597
Li	Trans. prob., Oscill. Strengths	E/T	633
Li^{+}	Trans. prob., Oscill. Strengths	E/T	633
Li^{0+--+}	Trans. prob., Oscill. Strengths	Th	641
Li^{0+--2+}	Trans. prob., Oscill. Strengths	Th	641
Li^{+}	Trans. prob., Oscill. Strengths	Th	677
Be	Energy Levels, Wavelengths	Th	14
^{7}**Be**$^{+}$	Energy Levels, Wavelengths	Th	44
^{9}**Be**$^{+}$	Energy Levels, Wavelengths	Th	44
^{10}**Be**$^{+}$	Energy Levels, Wavelengths	Th	44
^{11}**Be**$^{+}$	Energy Levels, Wavelengths	Th	44
Be^{+}	Energy Levels, Wavelengths	Th	44
^{7}**Be**$^{+}$	Energy Levels, Wavelengths	Th	60
^{9}**Be**$^{+}$	Energy Levels, Wavelengths	Th	60
^{10}**Be**$^{+}$	Energy Levels, Wavelengths	Th	60
^{11}**Be**$^{+}$	Energy Levels, Wavelengths	Th	60
Be^{+}	Energy Levels, Wavelengths	Th	60
Be	Energy Levels, Wavelengths	Th	69
^{9}**Be**$^{+}$	Energy Levels, Wavelengths	Th	74
Be^{+}	Energy Levels, Wavelengths	Th	74
Be	Energy Levels, Wavelengths	Th	102
Be	Energy Levels, Wavelengths	Th	114
Be	Energy Levels, Wavelengths	E/T	145
Be	Energy Levels, Wavelengths	Th	167
Be^{0+--3+}	Energy Levels, Wavelengths	Exp	220
Be^{+}	Energy Levels, Wavelengths	Th	241
Be	Energy Levels, Wavelengths	Th	242
Be^{-}	Energy Levels, Wavelengths	Th	291

$\mathbf{C}^{4+}$	Energy Levels, Wavelengths	Exp	451
$\mathbf{C}^{5+}$	Energy Levels, Wavelengths	Exp	451
$\mathbf{C}^{2+}$	Energy Levels, Wavelengths	Th	472
$\mathbf{C}^{-}$	Energy Levels, Wavelengths	Th	506
C	Energy Levels, Wavelengths	Th	514
C	Energy Levels, Wavelengths	Th	527
$\mathbf{C\text{-}N}^{0+--+}$	Energy Levels, Wavelengths	Exp	534
$\mathbf{C}^{0+--+}$	Energy Levels, Wavelengths	Exp	534
$\mathbf{C}^{-}$	Energy Levels, Wavelengths	Th	536
$\mathbf{C}^{-}$	Energy Levels, Wavelengths	Th	544
$\mathbf{C}^{-}$	Energy Levels, Wavelengths	E/T	565
C	Energy Levels, Wavelengths	Exp	566
C	Trans. prob., Oscill. Strengths	E/T	596
$\mathbf{C}^{4+}$	Trans. prob., Oscill. Strengths	Th	619
$\mathbf{C}^{2+}$	Trans. prob., Oscill. Strengths	Th	620
$\mathbf{C}^{4+}$	Trans. prob., Oscill. Strengths	Th	626
$\mathbf{C}^{2+}$	Trans. prob., Oscill. Strengths	Th	655
C	Trans. prob., Oscill. Strengths	Th	691
$\mathbf{N}^{-}$	Energy Levels, Wavelengths	Th	213
N	Energy Levels, Wavelengths	Th	213
$\mathbf{N}^{5+--6+}$	Energy Levels, Wavelengths	Exp	305
N	Trans. prob., Oscill. Strengths	Exp	362
$\mathbf{N}^{+--3+}$	Energy Levels, Wavelengths	Exp	428
$\mathbf{N}^{5+}$	Energy Levels, Wavelengths	Exp	451
$\mathbf{N}^{3+}$	Energy Levels, Wavelengths	Th	472
$\mathbf{N}^{2+--4+}$	Energy Levels, Wavelengths	Exp	482
N	Energy Levels, Wavelengths	Exp	534
$\mathbf{N}^{0+--+}$	Energy Levels, Wavelengths	Exp	534
$\mathbf{N}^{-}$	Energy Levels, Wavelengths	Th	536
$\mathbf{N}^{-}$	Energy Levels, Wavelengths	Th	544
N	Energy Levels, Wavelengths	Exp	572
N	Energy Levels, Wavelengths	Exp	574
N	Energy Levels, Wavelengths	Exp	576
$\mathbf{N}^{+}$	Trans. prob., Oscill. Strengths	Th	594
$\mathbf{N}^{0+--+}$	Trans. prob., Oscill. Strengths	E/T	596
$\mathbf{N}^{3+}$	Trans. prob., Oscill. Strengths	Th	620
N	Trans. prob., Oscill. Strengths	Th	638
N	Trans. prob., Oscill. Strengths	Th	645
N	Trans. prob., Oscill. Strengths	E/T	688
$\mathbf{O}^{6+}$	Energy Levels, Wavelengths	Th	23
O	Energy Levels, Wavelengths	Exp	29
$\mathbf{O}^{-}$	Energy Levels, Wavelengths	Th	110
$\mathbf{O}^{3+--6+}$	Energy Levels, Wavelengths	Th	136
$\mathbf{O}^{3+--7+}$	Energy Levels, Wavelengths	Th	136
$\mathbf{O}^{4+}$	Energy Levels, Wavelengths	Th	179
O	Energy Levels, Wavelengths	Exp	227
$\mathbf{O}^{+--2+}$	Energy Levels, Wavelengths	Th	250
$\mathbf{O}^{4+}$	Energy Levels, Wavelengths	Exp	260
$\mathbf{O}^{5+}$	Energy Levels, Wavelengths	Exp	260
$\mathbf{O}^{2+--4+}$	Energy Levels, Wavelengths	E/T	267
$\mathbf{O}^{6+--7+}$	Energy Levels, Wavelengths	Exp	305
$\mathbf{O}^{6+}$	Trans. prob., Oscill. Strengths	Th	341
$\mathbf{O}^{3+}$	Trans. prob., Oscill. Strengths	Th	346
O	Trans. prob., Oscill. Strengths	Exp	363
O	Trans. prob., Oscill. Strengths	Exp	390
$\mathbf{O}^{6+}$	Energy Levels, Wavelengths	Th	470
$\mathbf{O}^{4+}$	Energy Levels, Wavelengths	Th	472

O^{5+}	Energy Levels, Wavelengths	Th	473
O^{+--6+}	Energy Levels, Wavelengths	Exp	482
O^{+}	Energy Levels, Wavelengths	Th	483
O	Energy Levels, Wavelengths	Exp	534
O^{-}	Energy Levels, Wavelengths	Th	536
O^{-}	Energy Levels, Wavelengths	Th	544
O^{4+}	Energy Levels, Wavelengths	Exp	546
O^{6+}	Energy Levels, Wavelengths	Exp	558
O^{-}	Energy Levels, Wavelengths	E/T	565
O	Energy Levels, Wavelengths	Exp	566
O^{2+}	Trans. prob., Oscill. Strengths	Th	580
O^{+}	Trans. prob., Oscill. Strengths	Th	589
O^{+}	Trans. prob., Oscill. Strengths	E/T	596
O^{4+}	Trans. prob., Oscill. Strengths	Th	620
O	Trans. prob., Oscill. Strengths	Th	621
O^{+}	Trans. prob., Oscill. Strengths	Th	624
O	Trans. prob., Oscill. Strengths	Exp	640
O^{3+}	Trans. prob., Oscill. Strengths	Th	658
O^{6+}	Trans. prob., Oscill. Strengths	Th	664
O^{3+}	Trans. prob., Oscill. Strengths	Th	672
O^{+}	Trans. prob., Oscill. Strengths	E/T	688
O	Trans. prob., Oscill. Strengths	Th	697
F^{6+}	Energy Levels, Wavelengths	Exp	268
F	Energy Levels, Wavelengths	Th	438
F^{5+}	Energy Levels, Wavelengths	Th	472
F^{-}	Energy Levels, Wavelengths	Th	536
F^{6+--8+}	Energy Levels, Wavelengths	Exp	543
F^{-}	Energy Levels, Wavelengths	Th	544
F^{5+}	Trans. prob., Oscill. Strengths	Th	620
F^{7+}	Trans. prob., Oscill. Strengths	Th	626
F^{+}	Trans. prob., Oscill. Strengths	Th	647
Ne^{5+}	Energy Levels, Wavelengths	Th	10
Ne^{-}	Energy Levels, Wavelengths	E/T	19
Ne	Energy Levels, Wavelengths	Exp	22
Ne^{0+--8+}	Energy Levels, Wavelengths	Th	34
Ne^{4+}	Energy Levels, Wavelengths	Th	61
Ne	Energy Levels, Wavelengths	Exp	77
Ne^{7+}	Energy Levels, Wavelengths	Exp	91
Ne	Energy Levels, Wavelengths	Th	101
Ne^{6+}	Energy Levels, Wavelengths	Th	102
Ne	Energy Levels, Wavelengths	Exp	108
Ne	Energy Levels, Wavelengths	Th	122
Ne	Energy Levels, Wavelengths	Th	129
Ne^{+}	Energy Levels, Wavelengths	Th	129
Ne	Energy Levels, Wavelengths	Th	167
Ne^{2+}	Energy Levels, Wavelengths	Exp	171
Ne	Energy Levels, Wavelengths	Th	178
Ne^{2+}	Energy Levels, Wavelengths	Exp	182
Ne	Energy Levels, Wavelengths	E/T	187
Ne^{0+--+}	Energy Levels, Wavelengths	E/T	187
Ne	Energy Levels, Wavelengths	Exp	249
Ne^{8+}	Energy Levels, Wavelengths	Exp	252
Ne^{2+}	Energy Levels, Wavelengths	Th	281
Ne^{9+}	Energy Levels, Wavelengths	Exp	287
Ne^{8+}	Energy Levels, Wavelengths	Th	314
Ne^{8+}	Energy Levels, Wavelengths	Th	315
Ne^{5+}	Trans. prob., Oscill. Strengths	Th	336

Ne^{+}	Trans. prob., Oscill. Strengths	Th	352
Ne^{4+}	Trans. prob., Oscill. Strengths	Th	377
Ne	Trans. prob., Oscill. Strengths	Exp	399
Ne	Energy Levels, Wavelengths	Th	432
Ne^{4+-7+}	Energy Levels, Wavelengths	Exp	451
Ne	Energy Levels, Wavelengths	Th	463
Ne	Energy Levels, Wavelengths	Th	469
Ne^{6+}	Energy Levels, Wavelengths	Th	472
Ne^{7+}	Energy Levels, Wavelengths	Th	473
Ne	Energy Levels, Wavelengths	E/T	474
Ne	Energy Levels, Wavelengths	Th	499
Ne	Energy Levels, Wavelengths	Th	541
Ne	Energy Levels, Wavelengths	Exp	550
Ne	Energy Levels, Wavelengths	Th	552
Ne^{6+}	Energy Levels, Wavelengths	Th	556
Ne	Trans. prob., Oscill. Strengths	Th	593
Ne^{8+}	Trans. prob., Oscill. Strengths	Th	619
Ne^{6+}	Trans. prob., Oscill. Strengths	Th	620
Ne^{8+}	Trans. prob., Oscill. Strengths	Th	654
Ne^{+}	Trans. prob., Oscill. Strengths	Th	665
Ne^{4+}	Trans. prob., Oscill. Strengths	Th	676
Ne^{6+}	Trans. prob., Oscill. Strengths	Th	680
Ne^{3+-7+}	Trans. prob., Oscill. Strengths	Th	684
Ne^{3+}	Trans. prob., Oscill. Strengths	E/T	688
Na	Energy Levels, Wavelengths	Exp	84
^{23}Na	Energy Levels, Wavelengths	Th	143
Na	Energy Levels, Wavelengths	Th	143
Na^{-}	Energy Levels, Wavelengths	Th	197
Na^{-}	Energy Levels, Wavelengths	Th	198
Na	Energy Levels, Wavelengths	Th	198
Na^{0+-3+}	Energy Levels, Wavelengths	Exp	220
$Na\text{-}Cl^{-}$	Energy Levels, Wavelengths	E/T	228
Na	Energy Levels, Wavelengths	Th	430
Na	Energy Levels, Wavelengths	Th	480
Na^{8+-10+}	Energy Levels, Wavelengths	Exp	543
Na	Energy Levels, Wavelengths	Exp	557
Na^{9+-10+}	Energy Levels, Wavelengths	Exp	558
Na	Energy Levels, Wavelengths	Exp	563
$Na\text{-}Cl^{-}$	Energy Levels, Wavelengths	E/T	565
Na	Energy Levels, Wavelengths	Exp	566
Na^{7+}	Trans. prob., Oscill. Strengths	Th	620
Na^{9+-10+}	Trans. prob., Oscill. Strengths	Th	639
Mg^{4+}	Energy Levels, Wavelengths	Th	3
Mg^{8+}	Energy Levels, Wavelengths	Th	5
Mg^{0+-+}	Energy Levels, Wavelengths	Exp	16
Mg^{8+}	Energy Levels, Wavelengths	Th	25
Mg^{+-10+}	Energy Levels, Wavelengths	Th	34
Mg^{-}	Energy Levels, Wavelengths	Th	59
Mg^{+}	Energy Levels, Wavelengths	Exp	81
Mg	Energy Levels, Wavelengths	Exp	133
Mg^{8+}	Energy Levels, Wavelengths	Th	134
Mg^{4+}	Energy Levels, Wavelengths	Th	135
Mg	Energy Levels, Wavelengths	Exp	152
Mg	Energy Levels, Wavelengths	Exp	153
Mg	Energy Levels, Wavelengths	Exp	154
Mg	Energy Levels, Wavelengths	Exp	169
Mg^{4+}	Energy Levels, Wavelengths	Th	172

Mg-Ni^{0+--4+}	Energy Levels, Wavelengths	Exp	220
Mg^{7+}	Energy Levels, Wavelengths	Exp	223
Mg-Si^{0+--+}	Energy Levels, Wavelengths	Exp	227
Mg	Energy Levels, Wavelengths	Exp	247
Mg^{-}	Energy Levels, Wavelengths	Th	272
Mg^{11+}	Energy Levels, Wavelengths	Exp	287
Mg^{8+}	Trans. prob., Oscill. Strengths	Th	344
Mg^{2+}	Trans. prob., Oscill. Strengths	Th	386
Mg^{0+--+}	Energy Levels, Wavelengths	Exp	436
Mg	Energy Levels, Wavelengths	Exp	453
Mg^{+}	Energy Levels, Wavelengths	Exp	454
Mg	Energy Levels, Wavelengths	Th	455
Mg	Energy Levels, Wavelengths	E/T	520
Mg	Energy Levels, Wavelengths	Exp	534
Mg	Energy Levels, Wavelengths	Exp	549
Mg	Energy Levels, Wavelengths	Exp	563
Mg^{-}	Energy Levels, Wavelengths	Exp	564
Mg	Energy Levels, Wavelengths	Exp	564
Mg	Energy Levels, Wavelengths	Exp	566
Mg^{4+}	Trans. prob., Oscill. Strengths	Th	586
Mg^{8+}	Trans. prob., Oscill. Strengths	Th	588
Mg	Trans. prob., Oscill. Strengths	Th	615
Mg	Trans. prob., Oscill. Strengths	Exp	617
Mg^{8+}	Trans. prob., Oscill. Strengths	Th	620
Mg	Trans. prob., Oscill. Strengths	Th	622
Mg$^{10+--11+}$	Trans. prob., Oscill. Strengths	Th	639
Mg^{+}	Trans. prob., Oscill. Strengths	Th	671
Mg	Trans. prob., Oscill. Strengths	Th	681
Al^{+}	Energy Levels, Wavelengths	Th	97
Al^{9+}	Energy Levels, Wavelengths	Th	219
Al$^{11+--12+}$	Energy Levels, Wavelengths	Exp	287
Al^{0+--9+}	Trans. prob., Oscill. Strengths	E/T	409
Al$^{0+--12+}$	Trans. prob., Oscill. Strengths	E/T	409
Al^{+--2+}	Energy Levels, Wavelengths	Exp	436
Al	Energy Levels, Wavelengths	E/T	494
Al^{11+}	Energy Levels, Wavelengths	Exp	519
Al$^{11+--12+}$	Energy Levels, Wavelengths	Exp	519
Al^{11+}	Energy Levels, Wavelengths	Exp	538
Al^{-}	Energy Levels, Wavelengths	Th	544
Al$^{10+--12+}$	Energy Levels, Wavelengths	Exp	558
Al	Energy Levels, Wavelengths	Exp	563
Al^{-}	Energy Levels, Wavelengths	E/T	565
Al	Energy Levels, Wavelengths	Exp	566
Al^{2+}	Energy Levels, Wavelengths	Exp	569
Al^{9+}	Trans. prob., Oscill. Strengths	Th	620
Al^{7+}	Trans. prob., Oscill. Strengths	Th	694
Si	Energy Levels, Wavelengths	E/T	31
Si$^{0+--12+}$	Energy Levels, Wavelengths	Th	34
Si$^{5+--11+}$	Energy Levels, Wavelengths	Exp	35
Si^{12+}	Energy Levels, Wavelengths	Th	40
^{28}**Si**$^{12+}$	Energy Levels, Wavelengths	Exp	45
Si^{12+}	Energy Levels, Wavelengths	Exp	45
Si	Energy Levels, Wavelengths	E/T	75
Si	Energy Levels, Wavelengths	E/T	118
Si^{9+}	Energy Levels, Wavelengths	Exp	146
Si^{12+}	Energy Levels, Wavelengths	Exp	146
Si$^{11+--13+}$	Energy Levels, Wavelengths	E/T	166

Si^{12+}	Energy Levels, Wavelengths	Exp	239
Si^{12+}	Energy Levels, Wavelengths	Exp	287
Si^{2+}	Energy Levels, Wavelengths	Th	290
Si^{5+}	Trans. prob., Oscill. Strengths	Th	350
Si	Trans. prob., Oscill. Strengths	Th	351
Si^{2+}	Trans. prob., Oscill. Strengths	Th	376
Si^{2+}	Trans. prob., Oscill. Strengths	E/T	389
Si$^{0+--10+}$	Trans. prob., Oscill. Strengths	E/T	408
Si$^{0+--12+}$	Trans. prob., Oscill. Strengths	E/T	408
Si	Trans. prob., Oscill. Strengths	Th	413
Si^{+}	Energy Levels, Wavelengths	Exp	436
Si^{3+}	Energy Levels, Wavelengths	Exp	436
Si	Energy Levels, Wavelengths	Th	444
Si^{4+}	Energy Levels, Wavelengths	Exp	466
Si	Energy Levels, Wavelengths	Th	514
Si	Energy Levels, Wavelengths	Exp	534
Si$^{12+--13+}$	Energy Levels, Wavelengths	Exp	538
Si^{-}	Energy Levels, Wavelengths	Th	544
Si^{11+}	Energy Levels, Wavelengths	Th	553
Si$^{12+--13+}$	Energy Levels, Wavelengths	Exp	558
Si^{-}	Energy Levels, Wavelengths	E/T	565
Si	Energy Levels, Wavelengths	Exp	566
Si^{2+--3+}	Energy Levels, Wavelengths	Exp	569
Si^{9+}	Trans. prob., Oscill. Strengths	Th	584
Si^{12+}	Trans. prob., Oscill. Strengths	Th	614
Si^{10+}	Trans. prob., Oscill. Strengths	Th	620
Si^{12+}	Trans. prob., Oscill. Strengths	Th	626
Si^{2+}	Trans. prob., Oscill. Strengths	Th	648
Si^{7+}	Trans. prob., Oscill. Strengths	Th	652
Si	Trans. prob., Oscill. Strengths	Th	691
P^{3+}	Trans. prob., Oscill. Strengths	E/T	389
P^{9+}	Energy Levels, Wavelengths	Th	500
P^{14+}	Energy Levels, Wavelengths	Exp	538
P^{-}	Energy Levels, Wavelengths	Th	544
P^{-}	Energy Levels, Wavelengths	E/T	565
P^{11+}	Trans. prob., Oscill. Strengths	Th	620
S$^{8+--12+}$	Energy Levels, Wavelengths	Exp	7
S^{12+}	Energy Levels, Wavelengths	E/T	8
S$^{10+--14+}$	Energy Levels, Wavelengths	Th	15
S$^{0+--14+}$	Energy Levels, Wavelengths	Th	34
S	Energy Levels, Wavelengths	Exp	37
S	Energy Levels, Wavelengths	Exp	38
S^{14+}	Energy Levels, Wavelengths	Th	41
S^{12+}	Energy Levels, Wavelengths	Th	52
S$^{8+--12+}$	Energy Levels, Wavelengths	Exp	93
S	Energy Levels, Wavelengths	Exp	128
S	Energy Levels, Wavelengths	Exp	161
S^{+}	Energy Levels, Wavelengths	E/T	173
S^{-}	Energy Levels, Wavelengths	Exp	188
^{32}**S**	Energy Levels, Wavelengths	Exp	188
S	Energy Levels, Wavelengths	Exp	188
S$^{6+--13+}$	Energy Levels, Wavelengths	Exp	192
S^{-}	Energy Levels, Wavelengths	Exp	206
S	Energy Levels, Wavelengths	Exp	206
S^{0+--+}	Energy Levels, Wavelengths	Exp	227
S	Energy Levels, Wavelengths	Th	229
S^{6+}	Energy Levels, Wavelengths	E/T	234

$S^{12+-14+}$	Energy Levels, Wavelengths	Exp	237
S^{8+-9+}	Energy Levels, Wavelengths	E/T	285
S^{8+}	Energy Levels, Wavelengths	Th	303
S^{7+-13+}	Energy Levels, Wavelengths	E/T	323
S-Cl	Energy Levels, Wavelengths	Th	444
S^{12+}	Energy Levels, Wavelengths	Th	523
S^{14+}	Energy Levels, Wavelengths	Exp	538
S^{-}	Energy Levels, Wavelengths	Th	544
S^{-}	Energy Levels, Wavelengths	E/T	565
S	Energy Levels, Wavelengths	Exp	566
S	Trans. prob., Oscill. Strengths	Th	594
S^{12+}	Trans. prob., Oscill. Strengths	Th	620
Cl^{14+}	Energy Levels, Wavelengths	Th	54
Cl^{5+}	Energy Levels, Wavelengths	Th	279
$Cl^{14+-15+}$	Energy Levels, Wavelengths	Exp	287
Cl^{9+}	Energy Levels, Wavelengths	Th	304
Cl^{+}	Energy Levels, Wavelengths	Th	310
Cl^{+}	Energy Levels, Wavelengths	Th	321
Cl^{4+}	Energy Levels, Wavelengths	Th	325
Cl	Trans. prob., Oscill. Strengths	Th	357
Cl	Trans. prob., Oscill. Strengths	Exp	375
Cl	Energy Levels, Wavelengths	Exp	487
Cl	Energy Levels, Wavelengths	Exp	504
Cl^{16+}	Energy Levels, Wavelengths	Exp	538
Cl^{-}	Energy Levels, Wavelengths	Th	544
Cl^{13+}	Trans. prob., Oscill. Strengths	Th	620
Ar^{8+}	Energy Levels, Wavelengths	Th	6
Ar^{5+}	Energy Levels, Wavelengths	E/T	11
Ar^{0+-16+}	Energy Levels, Wavelengths	Th	34
Ar	Energy Levels, Wavelengths	Exp	58
Ar^{+}	Energy Levels, Wavelengths	Exp	58
Ar	Energy Levels, Wavelengths	Exp	64
Ar	Energy Levels, Wavelengths	Exp	73
Ar	Energy Levels, Wavelengths	Exp	99
Ar^{10+}	Energy Levels, Wavelengths	Exp	105
Ar^{13+}	Energy Levels, Wavelengths	Exp	105
Ar^{11+}	Energy Levels, Wavelengths	Th	111
Ar	Energy Levels, Wavelengths	Exp	112
Ar^{0+-+}	Energy Levels, Wavelengths	Exp	121
Ar	Energy Levels, Wavelengths	Exp	125
Ar^{2+}	Energy Levels, Wavelengths	Exp	126
Ar	Energy Levels, Wavelengths	Th	129
Ar^{+}	Energy Levels, Wavelengths	Th	129
Ar	Energy Levels, Wavelengths	E/T	151
Ar	Energy Levels, Wavelengths	Th	176
Ar	Energy Levels, Wavelengths	Th	178
Ar	Energy Levels, Wavelengths	E/T	185
Ar	Energy Levels, Wavelengths	Exp	196
$Ar\text{-}Ca^{-}$	Energy Levels, Wavelengths	E/T	228
$Ar^{15+-16+}$	Energy Levels, Wavelengths	Exp	287
Ar	Energy Levels, Wavelengths	Exp	288
Ar^{4+}	Energy Levels, Wavelengths	Th	292
Ar^{15+}	Energy Levels, Wavelengths	Exp	297
Ar	Energy Levels, Wavelengths	E/T	318
Ar^{9+-15+}	Energy Levels, Wavelengths	Th	319
Ar^{17+}	Trans. prob., Oscill. Strengths	Th	345
Ar^{14+}	Trans. prob., Oscill. Strengths	Th	371

Ar	Trans. prob., Oscill. Strengths	Exp	380
Ar	Energy Levels, Wavelengths	Th	432
Ar^{16+}	Energy Levels, Wavelengths	Exp	434
Ar	Energy Levels, Wavelengths	E/T	443
Ar^{+}	Energy Levels, Wavelengths	E/T	443
Ar^{15+}	Energy Levels, Wavelengths	Exp	491
Ar^{16+}	Energy Levels, Wavelengths	Exp	491
Ar	Energy Levels, Wavelengths	Th	499
Ar^{4+}	Energy Levels, Wavelengths	Th	500
Ar^{14+}	Energy Levels, Wavelengths	Th	523
Ar	Energy Levels, Wavelengths	Exp	532
Ar	Energy Levels, Wavelengths	Th	541
Ar	Energy Levels, Wavelengths	Exp	550
Ar^{14+}	Energy Levels, Wavelengths	Th	556
Ar	Energy Levels, Wavelengths	Exp	571
Ar^{+}	Energy Levels, Wavelengths	Exp	573
Ar	Energy Levels, Wavelengths	Exp	578
Ar	Energy Levels, Wavelengths	Exp	579
Ar	Trans. prob., Oscill. Strengths	Th	593
Ar	Trans. prob., Oscill. Strengths	Th	594
Ar^{16+}	Trans. prob., Oscill. Strengths	Th	619
Ar^{15+}	Trans. prob., Oscill. Strengths	Exp	653
$Ar^{9+--16+}$	Trans. prob., Oscill. Strengths	Th	657
$Ar^{7+--17+}$	Trans. prob., Oscill. Strengths	Th	673
Ar^{6+--7+}	Trans. prob., Oscill. Strengths	Th	682
Ar^{7+}	Trans. prob., Oscill. Strengths	Th	682
K	Energy Levels, Wavelengths	Exp	84
^{39}K	Energy Levels, Wavelengths	Th	143
K	Energy Levels, Wavelengths	Th	143
K^{-}	Energy Levels, Wavelengths	Th	197
K	Energy Levels, Wavelengths	Exp	288
K	Energy Levels, Wavelengths	Th	480
$K^{17+--18+}$	Energy Levels, Wavelengths	Exp	538
K	Energy Levels, Wavelengths	Exp	557
K	Energy Levels, Wavelengths	Exp	563
$K\text{-}Cu^{-}$	Energy Levels, Wavelengths	E/T	565
$K\text{-}Br^{-}$	Energy Levels, Wavelengths	E/T	565
K	Energy Levels, Wavelengths	Exp	566
K^{15+}	Trans. prob., Oscill. Strengths	Th	620
Ca^{10+}	Energy Levels, Wavelengths	E/T	12
$Ca^{0+--18+}$	Energy Levels, Wavelengths	Th	34
Ca^{-}	Energy Levels, Wavelengths	Th	59
$Ca^{13+--14+}$	Energy Levels, Wavelengths	Exp	105
$Ca\text{-}Mn^{+}$	Energy Levels, Wavelengths	Exp	157
Ca^{0+--+}	Energy Levels, Wavelengths	Exp	227
Ca	Energy Levels, Wavelengths	Exp	288
Ca	Energy Levels, Wavelengths	Th	455
Ca	Energy Levels, Wavelengths	Exp	549
Ca	Energy Levels, Wavelengths	Exp	563
Ca^{0+--+}	Energy Levels, Wavelengths	Exp	566
Ca^{16+}	Trans. prob., Oscill. Strengths	Th	620
Sc^{+}	Energy Levels, Wavelengths	Exp	227
Sc-Ni	Energy Levels, Wavelengths	Exp	329
Sc	Energy Levels, Wavelengths	Exp	563
Sc	Energy Levels, Wavelengths	Exp	566
Sc^{+}	Trans. prob., Oscill. Strengths	Th	591
Sc^{17+}	Trans. prob., Oscill. Strengths	Th	620

Ti^{12+}	Energy Levels, Wavelengths	E/T	12
Ti^{3+}	Energy Levels, Wavelengths	Th	17
Ti^{3+}	Energy Levels, Wavelengths	Th	98
Ti^{15+}	Energy Levels, Wavelengths	Th	111
Ti^{3+}	Energy Levels, Wavelengths	Th	186
Ti^{17+}	Energy Levels, Wavelengths	Th	211
$Ti\text{-}Ni^{0+--+}$	Energy Levels, Wavelengths	Exp	227
Ti^{2+--3+}	Trans. prob., Oscill. Strengths	Th	335
Ti^{+}	Trans. prob., Oscill. Strengths	Th	339
Ti^{3+}	Trans. prob., Oscill. Strengths	Th	402
Ti^{3+}	Trans. prob., Oscill. Strengths	Th	405
Ti^{+}	Energy Levels, Wavelengths	Exp	436
Ti^{15+}	Energy Levels, Wavelengths	Th	483
Ti-Cu	Energy Levels, Wavelengths	Th	512
Ti	Energy Levels, Wavelengths	Th	512
Ti	Energy Levels, Wavelengths	Exp	566
Ti^{18+}	Trans. prob., Oscill. Strengths	Th	620
Ti^{20+}	Trans. prob., Oscill. Strengths	Th	626
Ti^{3+}	Trans. prob., Oscill. Strengths	Th	627
Ti^{3+}	Trans. prob., Oscill. Strengths	Th	630
Ti^{3+}	Trans. prob., Oscill. Strengths	Th	631
V	Energy Levels, Wavelengths	Th	512
V	Energy Levels, Wavelengths	Exp	534
V	Energy Levels, Wavelengths	Exp	540
V	Energy Levels, Wavelengths	Exp	566
Cr^{+--2+}	Energy Levels, Wavelengths	Exp	27
Cr^{2+}	Energy Levels, Wavelengths	Exp	27
Cr^{16+}	Energy Levels, Wavelengths	Th	50
Cr^{21+}	Energy Levels, Wavelengths	Th	116
Cr^{7+}	Energy Levels, Wavelengths	Th	210
Cr	Energy Levels, Wavelengths	Exp	245
Cr^{21+}	Energy Levels, Wavelengths	Exp	287
Cr^{16+}	Trans. prob., Oscill. Strengths	Th	368
Cr^{21+}	Trans. prob., Oscill. Strengths	Th	412
Cr	Energy Levels, Wavelengths	Exp	422
Cr^{+}	Energy Levels, Wavelengths	Exp	436
Cr	Energy Levels, Wavelengths	Exp	481
Cr	Energy Levels, Wavelengths	Th	512
Cr-Zn	Energy Levels, Wavelengths	Exp	563
Cr	Energy Levels, Wavelengths	Exp	566
Cr^{+}	Trans. prob., Oscill. Strengths	Th	591
Cr^{+}	Trans. prob., Oscill. Strengths	Th	696
Mn^{22+}	Energy Levels, Wavelengths	Th	86
Mn^{+}	Energy Levels, Wavelengths	Exp	248
Mn^{22+}	Trans. prob., Oscill. Strengths	Th	391
$Mn^{16+--23+}$	Trans. prob., Oscill. Strengths	Th	394
Mn^{+}	Energy Levels, Wavelengths	Exp	436
Mn	Energy Levels, Wavelengths	Exp	481
Mn	Energy Levels, Wavelengths	Th	512
$Mn^{6+--24+}$	Energy Levels, Wavelengths	E/T	531
Mn	Energy Levels, Wavelengths	Exp	566
Fe^{8+}	Energy Levels, Wavelengths	Exp	1
$Fe^{9+--12+}$	Energy Levels, Wavelengths	Exp	20
Fe^{16+}	Energy Levels, Wavelengths	Exp	21
Fe^{3+}	Energy Levels, Wavelengths	Th	26
Fe^{9+}	Energy Levels, Wavelengths	E/T	28
Fe^{13+}	Energy Levels, Wavelengths	Th	33

Fe^{21+}	Energy Levels, Wavelengths	Th	39
Fe^{20+}	Energy Levels, Wavelengths	Th	61
Fe^{22+}	Energy Levels, Wavelengths	Th	88
Fe^{5+}	Energy Levels, Wavelengths	Th	96
Fe^{15+}	Energy Levels, Wavelengths	Th	104
Fe$^{11+--12+}$	Energy Levels, Wavelengths	Exp	105
Fe^{16+}	Energy Levels, Wavelengths	Exp	105
Fe$^{8+--15+}$	Energy Levels, Wavelengths	Exp	146
Fe^{4+}	Energy Levels, Wavelengths	Th	158
Fe^{17+}	Energy Levels, Wavelengths	Th	160
Fe^{15+}	Energy Levels, Wavelengths	Th	162
Fe^{22+}	Energy Levels, Wavelengths	Th	193
Fe^{23+}	Energy Levels, Wavelengths	Exp	195
Fe^{17+}	Energy Levels, Wavelengths	Th	226
Fe^{2+}	Energy Levels, Wavelengths	Exp	227
Fe^{7+--9+}	Energy Levels, Wavelengths	Th	246
Fe$^{14+--23+}$	Energy Levels, Wavelengths	Exp	252
Fe^{14+}	Energy Levels, Wavelengths	Th	255
Fe^{10+}	Energy Levels, Wavelengths	Th	259
Fe^{16+}	Energy Levels, Wavelengths	Th	269
Fe^{16+}	Energy Levels, Wavelengths	E/T	278
Fe^{20+}	Energy Levels, Wavelengths	Exp	287
Fe^{13+}	Energy Levels, Wavelengths	Th	292
Fe$^{9+--24+}$	Energy Levels, Wavelengths	Exp	305
Fe^{16+}	Energy Levels, Wavelengths	Th	316
Fe^{18+}	Trans. prob., Oscill. Strengths	Th	342
Fe^{25+}	Trans. prob., Oscill. Strengths	Th	347
Fe^{6+}	Trans. prob., Oscill. Strengths	Th	348
Fe^{9+}	Trans. prob., Oscill. Strengths	Th	349
Fe^{13+}	Trans. prob., Oscill. Strengths	Th	355
Fe^{11+}	Trans. prob., Oscill. Strengths	Exp	356
Fe^{3+}	Trans. prob., Oscill. Strengths	Th	358
Fe^{2+}	Trans. prob., Oscill. Strengths	Th	359
Fe^{+}	Trans. prob., Oscill. Strengths	Exp	360
Fe^{21+}	Trans. prob., Oscill. Strengths	Th	361
Fe^{20+}	Trans. prob., Oscill. Strengths	Th	377
Fe^{10+}	Trans. prob., Oscill. Strengths	Th	379
Fe^{22+}	Trans. prob., Oscill. Strengths	Th	392
Fe^{15+}	Trans. prob., Oscill. Strengths	Th	398
Fe^{5+}	Trans. prob., Oscill. Strengths	Th	401
Fe^{3+}	Trans. prob., Oscill. Strengths	Th	403
Fe^{23+}	Trans. prob., Oscill. Strengths	Th	410
Fe^{18+}	Trans. prob., Oscill. Strengths	Th	416
Fe$^{5+--14+}$	Energy Levels, Wavelengths	Exp	423
Fe^{15+}	Energy Levels, Wavelengths	Exp	424
Fe	Energy Levels, Wavelengths	Exp	425
Fe^{+}	Energy Levels, Wavelengths	Exp	435
Fe^{+}	Energy Levels, Wavelengths	Exp	436
Fe^{18+}	Energy Levels, Wavelengths	E/T	442
Fe$^{16+--24+}$	Energy Levels, Wavelengths	Th	448
Fe^{23+}	Energy Levels, Wavelengths	Th	461
Fe^{15+}	Energy Levels, Wavelengths	Th	465
Fe	Energy Levels, Wavelengths	Exp	481
Fe	Energy Levels, Wavelengths	Exp	492
Fe$^{17+--23+}$	Energy Levels, Wavelengths	Exp	497
Fe^{5+}	Energy Levels, Wavelengths	Exp	498
Fe	Energy Levels, Wavelengths	Th	512

Fe	Energy Levels, Wavelengths	Exp	533
Fe	Energy Levels, Wavelengths	Exp	535
Fe	Energy Levels, Wavelengths	Exp	566
$\mathbf{Fe}^{9+}$	Trans. prob., Oscill. Strengths	Exp	581
$\mathbf{Fe}^{+}$	Trans. prob., Oscill. Strengths	E/T	585
$\mathbf{Fe}^{14+}$	Trans. prob., Oscill. Strengths	Th	606
$\mathbf{Fe}^{2+}$	Trans. prob., Oscill. Strengths	Th	609
$\mathbf{Fe}^{16+--24+}$	Trans. prob., Oscill. Strengths	Th	610
$\mathbf{Fe}^{13+}$	Trans. prob., Oscill. Strengths	Th	613
$\mathbf{Fe}^{15+}$	Trans. prob., Oscill. Strengths	Th	616
$\mathbf{Fe}^{24+}$	Trans. prob., Oscill. Strengths	Th	619
$\mathbf{Fe}^{24+}$	Trans. prob., Oscill. Strengths	Th	626
$\mathbf{Fe}^{2+}$	Trans. prob., Oscill. Strengths	Th	632
$\mathbf{Fe}^{22+}$	Trans. prob., Oscill. Strengths	Th	644
$\mathbf{Fe}^{16+}$	Trans. prob., Oscill. Strengths	Th	656
$\mathbf{Fe}^{9+}$	Trans. prob., Oscill. Strengths	Th	667
$\mathbf{Fe}^{4+}$	Trans. prob., Oscill. Strengths	Th	669
$\mathbf{Fe}^{7+}$	Trans. prob., Oscill. Strengths	Th	674
$\mathbf{Fe}^{13+}$	Trans. prob., Oscill. Strengths	Th	675
$\mathbf{Fe}^{14+}$	Trans. prob., Oscill. Strengths	Th	679
Fe	Trans. prob., Oscill. Strengths	Exp	683
Fe	Trans. prob., Oscill. Strengths	Exp	689
Co	Energy Levels, Wavelengths	Th	512
$\mathbf{Ni}^{24+}$	Energy Levels, Wavelengths	Th	24
$\mathbf{Ni}^{25+}$	Energy Levels, Wavelengths	Th	32
$\mathbf{Ni}^{18+--26+}$	Energy Levels, Wavelengths	Th	89
$\mathbf{Ni}^{10+}$	Energy Levels, Wavelengths	Th	94
$\mathbf{Ni}^{14+}$	Energy Levels, Wavelengths	Exp	105
$\mathbf{Ni}^{18+--19+}$	Energy Levels, Wavelengths	Th	124
$\mathbf{Ni}^{24+}$	Energy Levels, Wavelengths	Th	148
$\mathbf{Ni}^{10+}$	Energy Levels, Wavelengths	Th	149
$\mathbf{Ni}^{17+}$	Energy Levels, Wavelengths	E/T	159
$\mathbf{Ni}^{11+}$	Energy Levels, Wavelengths	Th	284
$\mathbf{Ni}^{16+}$	Energy Levels, Wavelengths	Th	302
$\mathbf{Ni}^{24+}$	Trans. prob., Oscill. Strengths	Th	343
$\mathbf{Ni}^{25+}$	Trans. prob., Oscill. Strengths	Th	354
$\mathbf{Ni}^{26+}$	Trans. prob., Oscill. Strengths	Th	354
$\mathbf{Ni}^{18+--26+}$	Trans. prob., Oscill. Strengths	Th	393
$\mathbf{Ni}^{10+}$	Trans. prob., Oscill. Strengths	Th	396
$\mathbf{Ni}^{19+}$	Trans. prob., Oscill. Strengths	Th	414
$\mathbf{Ni}^{10+}$	Trans. prob., Oscill. Strengths	Th	418
$\mathbf{Ni}^{+}$	Energy Levels, Wavelengths	Exp	436
$\mathbf{Ni}^{24+}$	Energy Levels, Wavelengths	Th	446
$\mathbf{Ni}^{25+}$	Energy Levels, Wavelengths	Th	461
Ni	Energy Levels, Wavelengths	Th	512
$\mathbf{Ni}^{-}$	Energy Levels, Wavelengths	E/T	565
Ni	Energy Levels, Wavelengths	Exp	566
$\mathbf{Ni}^{24+}$	Trans. prob., Oscill. Strengths	Th	607
$\mathbf{Ni}^{24+}$	Trans. prob., Oscill. Strengths	Th	650
$\mathbf{Ni}^{2+}$	Trans. prob., Oscill. Strengths	Th	666
$\mathbf{Cu}^{9+}$	Energy Levels, Wavelengths	E/T	9
Cu	Energy Levels, Wavelengths	Exp	30
$\mathbf{Cu}^{0+--2+}$	Energy Levels, Wavelengths	Exp	220
Cu	Energy Levels, Wavelengths	Exp	427
Cu	Energy Levels, Wavelengths	Th	430
Cu	Energy Levels, Wavelengths	Exp	479
Cu	Energy Levels, Wavelengths	E/T	486

Cu	Energy Levels, Wavelengths	Th	512
Cu^{19+}	Energy Levels, Wavelengths	Exp	558
Cu^{+}	Trans. prob., Oscill. Strengths	Exp	582
Cu^{9+}	Trans. prob., Oscill. Strengths	Th	604
Cu	Trans. prob., Oscill. Strengths	Th	635
Cu	Trans. prob., Oscill. Strengths	Exp	689
Zn^{26+}	Energy Levels, Wavelengths	Th	148
Zn^{0+--3+}	Energy Levels, Wavelengths	Exp	220
Zn	Energy Levels, Wavelengths	Exp	227
Zn^{+}	Energy Levels, Wavelengths	Exp	436
Zn^{29+}	Energy Levels, Wavelengths	Exp	451
Zn	Energy Levels, Wavelengths	Th	455
Zn^{23+}	Energy Levels, Wavelengths	Th	483
Zn	Energy Levels, Wavelengths	Exp	566
Zn^{28+}	Trans. prob., Oscill. Strengths	Th	619
Ga-Kr^{0+--4+}	Energy Levels, Wavelengths	Exp	220
Ga-Br^{-}	Energy Levels, Wavelengths	E/T	228
Ga	Energy Levels, Wavelengths	E/T	235
Ga	Energy Levels, Wavelengths	Th	430
Ga	Energy Levels, Wavelengths	Exp	563
Ga^{-}	Energy Levels, Wavelengths	E/T	565
Ga^{+}	Trans. prob., Oscill. Strengths	Th	592
Ga^{29+}	Trans. prob., Oscill. Strengths	Th	614
Ga^{29+}	Trans. prob., Oscill. Strengths	Th	626
Ge^{30+}	Energy Levels, Wavelengths	Th	40
Ge^{22+}	Energy Levels, Wavelengths	Th	495
Ge	Energy Levels, Wavelengths	Th	500
Ge^{21+}	Energy Levels, Wavelengths	Exp	548
Ge	Energy Levels, Wavelengths	Exp	563
Ge^{-}	Energy Levels, Wavelengths	E/T	565
Ge^{19+}	Trans. prob., Oscill. Strengths	Th	693
As^{-}	Energy Levels, Wavelengths	E/T	565
Se^{32+}	Energy Levels, Wavelengths	Th	40
Se^{24+}	Energy Levels, Wavelengths	Th	495
Se^{2+}	Energy Levels, Wavelengths	Th	500
Se^{24+}	Energy Levels, Wavelengths	Exp	558
Se^{-}	Energy Levels, Wavelengths	E/T	565
Se^{32+}	Trans. prob., Oscill. Strengths	Th	614
Se^{21+}	Trans. prob., Oscill. Strengths	Th	693
Br^{3+}	Energy Levels, Wavelengths	Th	500
Br	Energy Levels, Wavelengths	Exp	504
^{80}**Kr**	Energy Levels, Wavelengths	Exp	13
^{82}**Kr**	Energy Levels, Wavelengths	Exp	13
^{83}**Kr**	Energy Levels, Wavelengths	Exp	13
^{84}**Kr**	Energy Levels, Wavelengths	Exp	13
^{86}**Kr**	Energy Levels, Wavelengths	Exp	13
Kr	Energy Levels, Wavelengths	Exp	13
Kr	Energy Levels, Wavelengths	Exp	18
Kr^{5+--6+}	Energy Levels, Wavelengths	Th	79
Kr^{26+}	Energy Levels, Wavelengths	Th	95
Kr^{23+}	Energy Levels, Wavelengths	Th	119
Kr^{33+}	Energy Levels, Wavelengths	Th	120
Kr	Energy Levels, Wavelengths	Exp	125
Kr	Energy Levels, Wavelengths	Th	129
Kr^{+}	Energy Levels, Wavelengths	Th	129
Kr^{32+}	Energy Levels, Wavelengths	Th	148
Kr	Energy Levels, Wavelengths	Exp	155

Kr^{24+}	Energy Levels, Wavelengths	Th	163
Kr^{34+}	Energy Levels, Wavelengths	Th	164
Kr^{26+}	Energy Levels, Wavelengths	Th	165
Kr^{5+}	Energy Levels, Wavelengths	E/T	174
Kr	Energy Levels, Wavelengths	Th	178
Kr^{25+}	Energy Levels, Wavelengths	Th	221
Kr^{28+}	Energy Levels, Wavelengths	Th	222
Kr^{30+}	Energy Levels, Wavelengths	Th	224
Kr^{32+}	Energy Levels, Wavelengths	Th	225
Kr^{31+}	Energy Levels, Wavelengths	Th	253
Kr$^{32+--34+}$	Energy Levels, Wavelengths	Th	283
Kr$^{27+--32+}$	Trans. prob., Oscill. Strengths	Th	369
Kr^{26+}	Trans. prob., Oscill. Strengths	Th	400
Kr	Energy Levels, Wavelengths	Th	432
Kr^{31+}	Energy Levels, Wavelengths	Th	445
Kr$^{25+--27+}$	Energy Levels, Wavelengths	Exp	491
Kr	Energy Levels, Wavelengths	Exp	493
Kr	Energy Levels, Wavelengths	Th	508
Kr	Energy Levels, Wavelengths	Exp	513
Kr	Energy Levels, Wavelengths	Exp	550
Kr	Energy Levels, Wavelengths	Th	554
Kr	Trans. prob., Oscill. Strengths	Th	593
Kr^{34+}	Trans. prob., Oscill. Strengths	Th	614
Kr^{5+}	Trans. prob., Oscill. Strengths	E/T	642
Kr^{6+}	Trans. prob., Oscill. Strengths	Th	659
Kr$^{11+--18+}$	Trans. prob., Oscill. Strengths	Th	660
Kr^{22+}	Trans. prob., Oscill. Strengths	Th	660
Rb	Energy Levels, Wavelengths	Exp	84
^{85}**Rb**	Energy Levels, Wavelengths	Th	143
Rb	Energy Levels, Wavelengths	Th	143
Rb^{-}	Energy Levels, Wavelengths	Th	197
Rb^{0+--3+}	Energy Levels, Wavelengths	Exp	220
Rb^{-}	Energy Levels, Wavelengths	E/T	228
Rb	Energy Levels, Wavelengths	Th	480
Rb	Energy Levels, Wavelengths	Exp	557
Rb	Energy Levels, Wavelengths	Exp	563
Rb^{-}	Energy Levels, Wavelengths	E/T	565
Rb^{35+}	Trans. prob., Oscill. Strengths	Th	626
Sr-Nb^{0+--4+}	Energy Levels, Wavelengths	Exp	220
Sr-Zr^{+}	Energy Levels, Wavelengths	Exp	227
Sr^{-}	Energy Levels, Wavelengths	E/T	228
Sr	Energy Levels, Wavelengths	Th	455
Sr	Energy Levels, Wavelengths	E/T	520
Sr	Energy Levels, Wavelengths	Exp	549
Sr	Energy Levels, Wavelengths	Exp	563
Sr^{25+}	Trans. prob., Oscill. Strengths	Th	693
Y^{37+}	Energy Levels, Wavelengths	Th	40
Y	Energy Levels, Wavelengths	Exp	563
Y-Pd^{-}	Energy Levels, Wavelengths	E/T	565
Y^{26+}	Trans. prob., Oscill. Strengths	Th	693
Zr^{36+}	Energy Levels, Wavelengths	Th	148
Zr^{2+}	Energy Levels, Wavelengths	Th	189
Zr^{30+}	Energy Levels, Wavelengths	Exp	491
Zr^{30+}	Energy Levels, Wavelengths	Th	495
Zr-Ag	Energy Levels, Wavelengths	Th	512
Zr	Energy Levels, Wavelengths	Th	512
Zr	Energy Levels, Wavelengths	Exp	542

Zr	Energy Levels, Wavelengths	Exp	566
Zr	Trans. prob., Oscill. Strengths	E/T	590
Zr^{38+}	Trans. prob., Oscill. Strengths	Th	614
Zr^{38+}	Trans. prob., Oscill. Strengths	Th	619
Zr^{27+}	Trans. prob., Oscill. Strengths	Th	693
Nb	Energy Levels, Wavelengths	Exp	68
Nb$^{30+--32+}$	Energy Levels, Wavelengths	Exp	491
Nb	Energy Levels, Wavelengths	Th	512
Nb^{13+}	Energy Levels, Wavelengths	Exp	537
Nb	Energy Levels, Wavelengths	Exp	555
Nb^{11+}	Trans. prob., Oscill. Strengths	Th	636
Mo^{40+}	Energy Levels, Wavelengths	Th	40
Mo$^{32+--40+}$	Energy Levels, Wavelengths	Th	48
Mo^{29+}	Energy Levels, Wavelengths	Th	119
Mo^{39+}	Energy Levels, Wavelengths	Th	120
Mo^{30+}	Energy Levels, Wavelengths	Th	163
Mo^{40+}	Energy Levels, Wavelengths	Th	164
Mo^{32+}	Energy Levels, Wavelengths	Th	165
Mo^{0+--3+}	Energy Levels, Wavelengths	Exp	220
Mo^{31+}	Energy Levels, Wavelengths	Th	221
Mo^{34+}	Energy Levels, Wavelengths	Th	222
Mo^{36+}	Energy Levels, Wavelengths	Th	224
Mo^{38+}	Energy Levels, Wavelengths	Th	225
Mo^{37+}	Energy Levels, Wavelengths	Th	253
Mo^{33+}	Energy Levels, Wavelengths	Th	254
Mo^{+}	Energy Levels, Wavelengths	Exp	311
Mo	Energy Levels, Wavelengths	Exp	329
Mo$^{32+--40+}$	Trans. prob., Oscill. Strengths	Th	366
Mo$^{31+--33+}$	Energy Levels, Wavelengths	Exp	491
Mo	Energy Levels, Wavelengths	Th	512
Mo^{5+}	Energy Levels, Wavelengths	Exp	568
Mo^{40+}	Trans. prob., Oscill. Strengths	Th	614
Mo^{40+}	Trans. prob., Oscill. Strengths	Th	626
Mo^{12+}	Trans. prob., Oscill. Strengths	Th	636
Tc	Energy Levels, Wavelengths	Exp	220
Tc	Energy Levels, Wavelengths	Th	512
Ru^{42+}	Energy Levels, Wavelengths	Th	40
Ru-Ag^{0+--2+}	Energy Levels, Wavelengths	Exp	220
Ru	Energy Levels, Wavelengths	Th	512
Ru^{42+}	Trans. prob., Oscill. Strengths	Th	614
Rh^{41+}	Energy Levels, Wavelengths	Th	148
Rh^{35+}	Energy Levels, Wavelengths	Th	495
Rh	Energy Levels, Wavelengths	Th	512
Rh^{43+}	Trans. prob., Oscill. Strengths	Th	626
Pd	Energy Levels, Wavelengths	Th	512
Ag	Energy Levels, Wavelengths	E/T	486
Ag^{37+}	Energy Levels, Wavelengths	Th	495
Ag	Energy Levels, Wavelengths	Th	512
Ag	Energy Levels, Wavelengths	Exp	563
Ag-I^{-}	Energy Levels, Wavelengths	E/T	565
Ag	Trans. prob., Oscill. Strengths	Th	635
Cd^{0+--3+}	Energy Levels, Wavelengths	Exp	220
Cd^{37+}	Energy Levels, Wavelengths	Th	221
Cd	Energy Levels, Wavelengths	Exp	227
Cd	Energy Levels, Wavelengths	Exp	329
Cd	Energy Levels, Wavelengths	Th	455
Cd	Energy Levels, Wavelengths	Exp	563

Cd^{46+}	Trans. prob., Oscill. Strengths	Th	614
In-Sb^{0+--4+}	Energy Levels, Wavelengths	Exp	220
In-Pr^{-}	Energy Levels, Wavelengths	E/T	228
In	Energy Levels, Wavelengths	Exp	563
In^{-}	Energy Levels, Wavelengths	E/T	565
Sn^{46+}	Energy Levels, Wavelengths	Th	148
Sn	Energy Levels, Wavelengths	Exp	329
Sn^{46+}	Energy Levels, Wavelengths	Th	556
Sn	Energy Levels, Wavelengths	Exp	563
Sn^{-}	Energy Levels, Wavelengths	E/T	565
Sn^{3+}	Energy Levels, Wavelengths	Exp	569
Sn^{48+}	Trans. prob., Oscill. Strengths	Th	614
Sn^{48+}	Trans. prob., Oscill. Strengths	Th	619
Sn^{48+}	Trans. prob., Oscill. Strengths	Th	626
Sb^{41+}	Energy Levels, Wavelengths	Th	495
Sb^{-}	Energy Levels, Wavelengths	E/T	565
Te	Energy Levels, Wavelengths	Exp	220
Te^{+}	Energy Levels, Wavelengths	Exp	220
Te^{2+}	Energy Levels, Wavelengths	Th	500
Te^{-}	Energy Levels, Wavelengths	E/T	565
Te^{50+}	Trans. prob., Oscill. Strengths	Th	614
I^{0+--4+}	Energy Levels, Wavelengths	Exp	220
I^{6+}	Energy Levels, Wavelengths	Th	449
I^{6+}	Trans. prob., Oscill. Strengths	Th	611
Xe$^{39+--43+}$	Energy Levels, Wavelengths	Th	49
Xe^{3+}	Energy Levels, Wavelengths	E/T	51
Xe^{45+}	Energy Levels, Wavelengths	Exp	57
Xe^{51+}	Energy Levels, Wavelengths	Exp	57
Xe^{42+}	Energy Levels, Wavelengths	Th	61
Xe	Energy Levels, Wavelengths	Exp	113
Xe$^{45+--51+}$	Energy Levels, Wavelengths	E/T	117
Xe^{41+}	Energy Levels, Wavelengths	Th	119
Xe^{51+}	Energy Levels, Wavelengths	Th	120
Xe	Energy Levels, Wavelengths	Exp	125
Xe	Energy Levels, Wavelengths	Th	129
Xe^{+}	Energy Levels, Wavelengths	Th	129
Xe^{9+}	Energy Levels, Wavelengths	Exp	139
Xe^{31+}	Energy Levels, Wavelengths	Exp	139
Xe^{50+}	Energy Levels, Wavelengths	Th	148
Xe^{42+}	Energy Levels, Wavelengths	Th	163
Xe^{52+}	Energy Levels, Wavelengths	Th	164
Xe^{44+}	Energy Levels, Wavelengths	Th	165
Xe	Energy Levels, Wavelengths	Exp	177
Xe	Energy Levels, Wavelengths	Th	178
Xe^{41+}	Energy Levels, Wavelengths	Exp	191
Xe	Energy Levels, Wavelengths	Exp	196
Xe^{2+--3+}	Energy Levels, Wavelengths	Exp	199
Xe	Energy Levels, Wavelengths	Exp	200
Xe	Energy Levels, Wavelengths	Exp	216
Xe-Cs^{0+--2+}	Energy Levels, Wavelengths	Exp	220
Xe^{43+}	Energy Levels, Wavelengths	Th	221
Xe^{46+}	Energy Levels, Wavelengths	Th	222
Xe^{48+}	Energy Levels, Wavelengths	Th	224
Xe^{50+}	Energy Levels, Wavelengths	Th	225
Xe^{26+}	Energy Levels, Wavelengths	Th	244
Xe^{49+}	Energy Levels, Wavelengths	Th	253
Xe^{45+}	Energy Levels, Wavelengths	Th	254

Xe$^{2+–3+}$	Energy Levels, Wavelengths	E/T	307
Xe^{10+}	Trans. prob., Oscill. Strengths	Th	337
Xe^{7+}	Trans. prob., Oscill. Strengths	Th	340
Xe$^{39+–43+}$	Trans. prob., Oscill. Strengths	Th	367
Xe^{3+}	Trans. prob., Oscill. Strengths	Th	372
Xe^{44+}	Trans. prob., Oscill. Strengths	Th	373
Xe^{26+}	Trans. prob., Oscill. Strengths	Th	415
Xe^{10+}	Trans. prob., Oscill. Strengths	Th	421
Xe	Energy Levels, Wavelengths	Th	432
Xe^{2+}	Energy Levels, Wavelengths	Exp	433
Xe$^{4+–8+}$	Energy Levels, Wavelengths	Exp	433
Xe^{7+}	Energy Levels, Wavelengths	Th	449
Xe^{44+}	Energy Levels, Wavelengths	Th	495
Xe	Energy Levels, Wavelengths	Th	508
Xe	Energy Levels, Wavelengths	Th	541
Xe	Energy Levels, Wavelengths	Exp	562
Xe^{26+}	Trans. prob., Oscill. Strengths	Th	592
Xe	Trans. prob., Oscill. Strengths	Th	593
Xe^{8+}	Trans. prob., Oscill. Strengths	Th	595
Xe	Trans. prob., Oscill. Strengths	Exp	599
Xe^{8+}	Trans. prob., Oscill. Strengths	E/T	600
Xe	Trans. prob., Oscill. Strengths	Exp	603
Xe^{7+}	Trans. prob., Oscill. Strengths	Th	611
Xe	Trans. prob., Oscill. Strengths	Exp	612
Xe^{52+}	Trans. prob., Oscill. Strengths	Th	614
Xe^{52+}	Trans. prob., Oscill. Strengths	Th	619
Xe^{52+}	Trans. prob., Oscill. Strengths	Th	626
Xe^{18+}	Trans. prob., Oscill. Strengths	Th	660
Xe$^{31+–32+}$	Trans. prob., Oscill. Strengths	Th	660
Xe^{6+}	Trans. prob., Oscill. Strengths	Th	663
^{133}**Cs**	Energy Levels, Wavelengths	Th	143
Cs	Energy Levels, Wavelengths	Th	143
Cs^{-}	Energy Levels, Wavelengths	Th	197
Cs^{8+}	Energy Levels, Wavelengths	Th	449
Cs	Energy Levels, Wavelengths	Th	480
Cs	Energy Levels, Wavelengths	Exp	557
Cs	Energy Levels, Wavelengths	Exp	562
Cs	Energy Levels, Wavelengths	Exp	563
Cs^{-}	Energy Levels, Wavelengths	E/T	565
Cs	Energy Levels, Wavelengths	Exp	566
Cs^{8+}	Trans. prob., Oscill. Strengths	Th	611
Ba-Pr$^{0+–4+}$	Energy Levels, Wavelengths	Exp	220
Ba-Ce^{+}	Energy Levels, Wavelengths	Exp	227
Ba	Energy Levels, Wavelengths	Th	290
Ba	Energy Levels, Wavelengths	Th	455
Ba	Energy Levels, Wavelengths	Exp	549
Ba	Energy Levels, Wavelengths	Exp	562
Ba	Energy Levels, Wavelengths	Exp	563
Ba$^{31+–34+}$	Trans. prob., Oscill. Strengths	Th	660
La-Nd	Energy Levels, Wavelengths	Exp	329
La^{47+}	Energy Levels, Wavelengths	Th	495
La^{-}	Energy Levels, Wavelengths	E/T	565
Ce^{29+}	Energy Levels, Wavelengths	Th	295
Pr$^{+–2+}$	Energy Levels, Wavelengths	Th	2
Nd^{56+}	Energy Levels, Wavelengths	Th	148
Nd^{32+}	Energy Levels, Wavelengths	Th	201
Nd-Sm$^{0+–+}$	Energy Levels, Wavelengths	Exp	220

Nd^{+}	Energy Levels, Wavelengths	Exp	227
Nd$^{57+--58+}$	Energy Levels, Wavelengths	Th	266
Nd$^{57+--58+}$	Energy Levels, Wavelengths	Th	300
Nd^{50+}	Energy Levels, Wavelengths	Th	495
Nd^{32+}	Energy Levels, Wavelengths	E/T	516
Nd	Energy Levels, Wavelengths	Exp	562
Nd	Energy Levels, Wavelengths	Exp	570
Nd^{58+}	Trans. prob., Oscill. Strengths	Th	619
Sm	Energy Levels, Wavelengths	Exp	329
Sm^{34+}	Energy Levels, Wavelengths	E/T	516
Sm	Energy Levels, Wavelengths	Exp	562
Sm^{22+}	Trans. prob., Oscill. Strengths	Th	668
Eu^{59+}	Energy Levels, Wavelengths	Th	148
Eu^{0+--2+}	Energy Levels, Wavelengths	Exp	220
Eu-Yb^{+}	Energy Levels, Wavelengths	Exp	227
Eu^{53+}	Energy Levels, Wavelengths	Th	495
Eu	Energy Levels, Wavelengths	Exp	562
Eu	Energy Levels, Wavelengths	Exp	563
Eu^{61+}	Trans. prob., Oscill. Strengths	Th	626
Gd-Tb^{0+--3+}	Energy Levels, Wavelengths	Exp	220
Gd-Tm	Energy Levels, Wavelengths	Exp	329
Gd^{36+}	Energy Levels, Wavelengths	E/T	516
Dy-Ho^{0+--+}	Energy Levels, Wavelengths	Exp	220
Dy^{38+}	Energy Levels, Wavelengths	E/T	516
Ho^{39+}	Energy Levels, Wavelengths	E/T	516
Er-Tm^{0+--2+}	Energy Levels, Wavelengths	Exp	220
Er$^{65+--66+}$	Energy Levels, Wavelengths	Th	266
Er$^{65+--66+}$	Energy Levels, Wavelengths	Th	300
Er^{21+}	Energy Levels, Wavelengths	Th	449
Er^{21+}	Trans. prob., Oscill. Strengths	Th	611
Tm-Lu^{-}	Energy Levels, Wavelengths	E/T	228
Yb^{66+}	Energy Levels, Wavelengths	Th	148
Yb^{0+--3+}	Energy Levels, Wavelengths	Exp	220
Yb$^{67+--68+}$	Energy Levels, Wavelengths	Th	266
Yb$^{67+--68+}$	Energy Levels, Wavelengths	Th	300
Yb^{24+}	Trans. prob., Oscill. Strengths	Th	374
Yb^{23+}	Energy Levels, Wavelengths	Th	449
Yb^{60+}	Energy Levels, Wavelengths	Exp	451
Yb^{42+}	Energy Levels, Wavelengths	E/T	516
Yb	Energy Levels, Wavelengths	Exp	563
Yb^{23+}	Trans. prob., Oscill. Strengths	Th	611
Yb^{68+}	Trans. prob., Oscill. Strengths	Th	619
Lu^{69+}	Trans. prob., Oscill. Strengths	Th	626
Hf-Ta^{0+--4+}	Energy Levels, Wavelengths	Exp	220
Hf-Pt^{-}	Energy Levels, Wavelengths	Th	437
Hf-Pt	Energy Levels, Wavelengths	Th	437
Hf-Au	Energy Levels, Wavelengths	Th	512
Hf	Energy Levels, Wavelengths	Th	512
Hf^{44+}	Energy Levels, Wavelengths	E/T	516
Hf-Au^{-}	Energy Levels, Wavelengths	E/T	565
Hf^{32+}	Trans. prob., Oscill. Strengths	Th	668
Ta^{+}	Energy Levels, Wavelengths	Th	4
Ta^{0+--+}	Energy Levels, Wavelengths	Exp	271
Ta^{2+}	Trans. prob., Oscill. Strengths	E/T	407
Ta	Energy Levels, Wavelengths	Exp	452
Ta^{+}	Energy Levels, Wavelengths	Exp	476
Ta	Energy Levels, Wavelengths	Th	512

Ta^{45+}	Energy Levels, Wavelengths	E/T	516
Ta	Energy Levels, Wavelengths	Exp	575
Ta^{+}	Trans. prob., Oscill. Strengths	E/T	587
W^{70+}	Energy Levels, Wavelengths	Th	148
$W\text{-}Pt^{0+--+}$	Energy Levels, Wavelengths	Exp	220
W^{46+}	Energy Levels, Wavelengths	Exp	236
W^{13+}	Energy Levels, Wavelengths	E/T	264
W^{45+}	Energy Levels, Wavelengths	Th	295
$W^{27+--29+}$	Energy Levels, Wavelengths	E/T	331
W^{39+}	Energy Levels, Wavelengths	E/T	331
$W^{40+--45+}$	Energy Levels, Wavelengths	E/T	331
$W^{40+--50+}$	Energy Levels, Wavelengths	E/T	334
W^{46+}	Energy Levels, Wavelengths	E/T	334
$W^{33+--37+}$	Trans. prob., Oscill. Strengths	Th	353
W^{64+}	Trans. prob., Oscill. Strengths	Th	373
W^{2+}	Trans. prob., Oscill. Strengths	E/T	382
W^{13+}	Trans. prob., Oscill. Strengths	Th	384
W^{+}	Trans. prob., Oscill. Strengths	E/T	395
$W^{39+--44+}$	Trans. prob., Oscill. Strengths	Th	420
$W^{42+--46+}$	Trans. prob., Oscill. Strengths	Th	420
$W^{46+--47+}$	Trans. prob., Oscill. Strengths	Th	420
$W^{45+--50+}$	Energy Levels, Wavelengths	Exp	431
$W^{60+--64+}$	Energy Levels, Wavelengths	Exp	431
W^{2+--6+}	Energy Levels, Wavelengths	E/T	447
W^{2+--7+}	Energy Levels, Wavelengths	E/T	447
$W^{2+--73+}$	Energy Levels, Wavelengths	E/T	447
$W^{27+--49+}$	Energy Levels, Wavelengths	E/T	447
W^{50+}	Energy Levels, Wavelengths	E/T	447
W^{52+}	Energy Levels, Wavelengths	E/T	447
$W^{54+--62+}$	Energy Levels, Wavelengths	E/T	447
$W^{54+--64+}$	Energy Levels, Wavelengths	E/T	447
W^{63+}	Energy Levels, Wavelengths	E/T	447
W^{64+}	Energy Levels, Wavelengths	E/T	447
W^{72+}	Energy Levels, Wavelengths	E/T	447
W^{73+}	Energy Levels, Wavelengths	E/T	447
W^{27+}	Energy Levels, Wavelengths	Th	449
W^{62+}	Energy Levels, Wavelengths	Th	478
$W^{13+--67+}$	Energy Levels, Wavelengths	Exp	485
$W^{14+--35+}$	Energy Levels, Wavelengths	E/T	489
$W^{27+--35+}$	Energy Levels, Wavelengths	E/T	489
W^{39+}	Energy Levels, Wavelengths	E/T	489
$W^{39+--48+}$	Energy Levels, Wavelengths	E/T	489
$W^{40+--48+}$	Energy Levels, Wavelengths	E/T	489
$W^{57+--67+}$	Energy Levels, Wavelengths	E/T	489
$W^{35+--37+}$	Energy Levels, Wavelengths	Exp	490
$W^{45+--50+}$	Energy Levels, Wavelengths	Exp	490
W	Energy Levels, Wavelengths	Exp	502
W	Energy Levels, Wavelengths	Th	512
W	Energy Levels, Wavelengths	Exp	570
W^{2+}	Trans. prob., Oscill. Strengths	Exp	608
W^{27+}	Trans. prob., Oscill. Strengths	Th	611
W^{62+}	Trans. prob., Oscill. Strengths	Th	628
$W^{30+--36+}$	Trans. prob., Oscill. Strengths	Th	668
W^{42+}	Trans. prob., Oscill. Strengths	Th	668
$Re\text{-}Au^{-}$	Energy Levels, Wavelengths	E/T	228
Re	Energy Levels, Wavelengths	Th	512
Re	Energy Levels, Wavelengths	Exp	577

Os	Energy Levels, Wavelengths	Th	512
Os	Energy Levels, Wavelengths	Exp	570
Os	Energy Levels, Wavelengths	Exp	575
$\mathbf{Ir}^{16+}$	Energy Levels, Wavelengths	E/T	264
Ir	Energy Levels, Wavelengths	Th	512
$\mathbf{Ir}^{75+}$	Trans. prob., Oscill. Strengths	Th	626
Pt	Energy Levels, Wavelengths	Th	512
$\mathbf{Pt}^{-}$	Energy Levels, Wavelengths	E/T	565
$\mathbf{Au}^{53+--69+}$	Energy Levels, Wavelengths	E/T	71
$\mathbf{Au}^{59+}$	Energy Levels, Wavelengths	E/T	71
$\mathbf{Au}^{65+}$	Energy Levels, Wavelengths	E/T	71
$\mathbf{Au}^{68+}$	Energy Levels, Wavelengths	E/T	71
$\mathbf{Au}^{69+}$	Energy Levels, Wavelengths	E/T	71
$\mathbf{Au}^{-}$	Energy Levels, Wavelengths	Exp	72
$\mathbf{Au}^{56+--58+}$	Energy Levels, Wavelengths	Exp	147
$\mathbf{Au\text{-}Hg}^{0+--2+}$	Energy Levels, Wavelengths	Exp	220
$\mathbf{Au}^{18+}$	Energy Levels, Wavelengths	E/T	264
$\mathbf{Au}^{75+}$	Energy Levels, Wavelengths	Th	273
$^{197}\mathbf{Au}^{76+}$	Energy Levels, Wavelengths	Exp	276
$\mathbf{Au}^{76+}$	Energy Levels, Wavelengths	Exp	276
$\mathbf{Au}^{50+}$	Energy Levels, Wavelengths	Th	295
$\mathbf{Au}^{70+--78+}$	Trans. prob., Oscill. Strengths	Th	364
Au	Trans. prob., Oscill. Strengths	Th	378
$\mathbf{Au}^{2+}$	Trans. prob., Oscill. Strengths	Th	381
$\mathbf{Au}^{+}$	Trans. prob., Oscill. Strengths	E/T	419
$\mathbf{Au}^{67+--68+}$	Energy Levels, Wavelengths	Exp	456
Au	Energy Levels, Wavelengths	Th	462
$\mathbf{Au}^{2+--4+}$	Energy Levels, Wavelengths	Exp	464
Au	Energy Levels, Wavelengths	Exp	510
Au	Energy Levels, Wavelengths	Th	512
Au	Energy Levels, Wavelengths	Exp	551
$\mathbf{Au}^{69+}$	Energy Levels, Wavelengths	Exp	561
Au	Energy Levels, Wavelengths	Exp	563
$\mathbf{Au}^{51+}$	Trans. prob., Oscill. Strengths	Th	646
$^{198}\mathbf{Hg}$	Energy Levels, Wavelengths	Exp	220
$^{198}\mathbf{Hg}^{+}$	Energy Levels, Wavelengths	Exp	220
$\mathbf{Hg}^{77+--78+}$	Energy Levels, Wavelengths	Th	266
$\mathbf{Hg}^{77+--78+}$	Energy Levels, Wavelengths	Th	300
$\mathbf{Hg}^{34+}$	Trans. prob., Oscill. Strengths	Th	374
Hg	Energy Levels, Wavelengths	Th	455
Hg	Energy Levels, Wavelengths	Exp	563
$\mathbf{Hg}^{78+}$	Trans. prob., Oscill. Strengths	Th	619
$\mathbf{Tl}^{0+--3+}$	Energy Levels, Wavelengths	Exp	220
$\mathbf{Tl}^{-}$	Energy Levels, Wavelengths	E/T	228
Tl	Energy Levels, Wavelengths	Exp	563
$\mathbf{Tl\text{-}At}^{-}$	Energy Levels, Wavelengths	E/T	565
$\mathbf{Tl}^{-}$	Energy Levels, Wavelengths	E/T	565
$\mathbf{Pb\text{-}Bi}^{0+--4+}$	Energy Levels, Wavelengths	Exp	220
$\mathbf{Pb}^{21+}$	Energy Levels, Wavelengths	E/T	264
$\mathbf{Pb}^{78+}$	Energy Levels, Wavelengths	Th	273
$^{208}\mathbf{Pb}^{79+}$	Energy Levels, Wavelengths	Exp	276
$\mathbf{Pb}^{79+}$	Energy Levels, Wavelengths	Exp	276
Pb	Energy Levels, Wavelengths	Th	500
Pb	Energy Levels, Wavelengths	Exp	563
$\mathbf{Pb}^{39+}$	Trans. prob., Oscill. Strengths	Th	668
$\mathbf{Pb}^{41+}$	Trans. prob., Oscill. Strengths	Th	668
$\mathbf{Pb}^{42+--44+}$	Trans. prob., Oscill. Strengths	Th	668

Pb^{50+}	Trans. prob., Oscill. Strengths	Th	668
Bi^{79+}	Energy Levels, Wavelengths	Th	148
Bi^{80+}	Energy Levels, Wavelengths	Th	170
Bi^{-}	Energy Levels, Wavelengths	E/T	228
Bi^{79+}	Energy Levels, Wavelengths	Th	273
Bi^{+}	Energy Levels, Wavelengths	Th	500
Bi	Energy Levels, Wavelengths	Exp	563
Po-Fr	Energy Levels, Wavelengths	Exp	220
Rn-Rf	Energy Levels, Wavelengths	E/T	521
Fr^{-}	Energy Levels, Wavelengths	Th	197
Fr^{-}	Energy Levels, Wavelengths	E/T	228
Fr^{47+}	Trans. prob., Oscill. Strengths	Th	668
Ra	Energy Levels, Wavelengths	Exp	220
Ra^{+}	Energy Levels, Wavelengths	Exp	220
Ra^{-}	Energy Levels, Wavelengths	E/T	228
Ac^{0+--2+}	Energy Levels, Wavelengths	Exp	220
Th^{0+--2+}	Energy Levels, Wavelengths	Exp	121
Th^{86+}	Energy Levels, Wavelengths	Th	148
Th^{0+--3+}	Energy Levels, Wavelengths	Exp	220
Th^{44+}	Trans. prob., Oscill. Strengths	Th	374
Th^{88+}	Trans. prob., Oscill. Strengths	Th	619
$Pa\text{-}U^{0+--+}$	Energy Levels, Wavelengths	Exp	220
$^{235}U^{89+}$	Energy Levels, Wavelengths	Th	136
U^{89+}	Energy Levels, Wavelengths	Th	136
U^{88+}	Energy Levels, Wavelengths	Th	148
U^{89+}	Energy Levels, Wavelengths	Th	170
U^{89+}	Energy Levels, Wavelengths	Th	230
U^{31+}	Energy Levels, Wavelengths	E/T	264
U^{88+}	Energy Levels, Wavelengths	Th	273
$^{238}U^{89+}$	Energy Levels, Wavelengths	Exp	276
U^{89+}	Energy Levels, Wavelengths	Exp	276
U^{82+}	Trans. prob., Oscill. Strengths	Th	373
U^{46+}	Trans. prob., Oscill. Strengths	Th	374
U^{89+}	Energy Levels, Wavelengths	Exp	451
U^{90+}	Trans. prob., Oscill. Strengths	Th	619
U^{49+}	Trans. prob., Oscill. Strengths	Th	668
U^{51+}	Trans. prob., Oscill. Strengths	Th	668
$U^{52+--54+}$	Trans. prob., Oscill. Strengths	Th	668
U^{60+}	Trans. prob., Oscill. Strengths	Th	668
Np	Energy Levels, Wavelengths	Exp	220
Pu	Energy Levels, Wavelengths	Exp	220
Pu^{+}	Energy Levels, Wavelengths	Exp	220
Fm^{96+}	Energy Levels, Wavelengths	Th	148
Fm^{93+}	Energy Levels, Wavelengths	Th	483
Fm^{98+}	Trans. prob., Oscill. Strengths	Th	619
Lr^{99+}	Energy Levels, Wavelengths	Th	148
D	Energy Levels, Wavelengths	E/T	56
D^{-}	Energy Levels, Wavelengths	Exp	138
D	Energy Levels, Wavelengths	Exp	203
D^{-}	Energy Levels, Wavelengths	Th	314
D	Trans. prob., Oscill. Strengths	E/T	633
T^{-}	Energy Levels, Wavelengths	Th	314
T	Trans. prob., Oscill. Strengths	E/T	633
H Z= 1-100	Energy Levels, Wavelengths	Th	467
H Z= 20-100	Energy Levels, Wavelengths	Th	471
H Z= 1-109	Energy Levels, Wavelengths	Th	518
H Z= 1-100	Energy Levels, Wavelengths	Th	525

H Z= 10-95	Energy Levels, Wavelengths	Th	547
H Z= 1-100	Energy Levels, Wavelengths	Th	567
H Z= 1-100	Trans. prob., Oscill. Strengths	Th	605
H Z= 1-100	Trans. prob., Oscill. Strengths	Th	618
H Z= 1-10	Trans. prob., Oscill. Strengths	Th	629
H Z= 1-100	Trans. prob., Oscill. Strengths	Th	637
H Z= 1-100	Trans. prob., Oscill. Strengths	Th	686
H Z= 1-10	Trans. prob., Oscill. Strengths	Th	687
He Z= 16-29	Energy Levels, Wavelengths	Th	40
He Z= 36-37	Energy Levels, Wavelengths	Th	40
He Z= 48-54 step 2	Energy Levels, Wavelengths	Th	40
He Z= 6-8	Energy Levels, Wavelengths	Th	43
He Z= 2-10	Energy Levels, Wavelengths	Th	76
He Z= 1-3	Energy Levels, Wavelengths	Th	83
He Z= 2-6	Energy Levels, Wavelengths	Th	85
He Z= 2-36	Energy Levels, Wavelengths	Th	109
He Z= 2-30	Energy Levels, Wavelengths	Th	164
He Z= 6-8	Energy Levels, Wavelengths	Th	209
He Z= 6-30	Energy Levels, Wavelengths	Th	212
He Z= 3-10	Energy Levels, Wavelengths	Th	265
He Z= 62-66	Energy Levels, Wavelengths	Th	266
He Z= 91-93	Energy Levels, Wavelengths	Th	266
He Z= 62-66	Energy Levels, Wavelengths	Th	300
He Z= 91-93	Energy Levels, Wavelengths	Th	300
He Z= 1-4	Energy Levels, Wavelengths	Th	314
He Z= 2-6	Energy Levels, Wavelengths	Th	324
He Z= 3-8	Energy Levels, Wavelengths	Th	426
He Z= 10-18 step 2	Energy Levels, Wavelengths	Th	429
He Z= 14-54	Energy Levels, Wavelengths	Th	460
He Z= 1-6	Energy Levels, Wavelengths	Th	484
He Z= 2-18	Energy Levels, Wavelengths	Th	488
He Z= 20-100	Energy Levels, Wavelengths	Th	509
He Z= 20-109	Energy Levels, Wavelengths	Th	517
He Z= 2-100	Energy Levels, Wavelengths	Th	524
He Z= 2-5	Energy Levels, Wavelengths	Th	526
He Z= 2-10	Energy Levels, Wavelengths	Th	545
He Z= 16-18	Trans. prob., Oscill. Strengths	Th	614
He Z= 20-28	Trans. prob., Oscill. Strengths	Th	614
He Z= 2-5	Trans. prob., Oscill. Strengths	Th	643
He Z= 10-54	Trans. prob., Oscill. Strengths	Th	695
Li Z= 6-8	Energy Levels, Wavelengths	Th	43
Li Z= 3-30	Energy Levels, Wavelengths	Th	120
Li Z= 3-18	Energy Levels, Wavelengths	E/T	132
Li Z= 14-54	Energy Levels, Wavelengths	Th	140
Li Z= 60-100	Energy Levels, Wavelengths	Th	170
Li Z= 6-28	Energy Levels, Wavelengths	Th	230
Li Z= 5-8	Energy Levels, Wavelengths	Exp	263
Li Z= 62-66	Energy Levels, Wavelengths	Th	266
Li Z= 91-93	Energy Levels, Wavelengths	Th	266
Li Z= 2-7	Energy Levels, Wavelengths	Th	296
Li Z= 62-66	Energy Levels, Wavelengths	Th	300
Li Z= 91-93	Energy Levels, Wavelengths	Th	300
Li Z= 5-9	Energy Levels, Wavelengths	Exp	322
Li Z= 11-20	Energy Levels, Wavelengths	Th	328
Li Z= 5-9	Energy Levels, Wavelengths	Exp	330
Li Z= 10-20	Trans. prob., Oscill. Strengths	Th	404
Li Z= 10-18 step 2	Energy Levels, Wavelengths	Th	429

Li Z= 10-90	Energy Levels, Wavelengths	Th	501
Li Z= 3-100	Energy Levels, Wavelengths	Th	524
Li Z= 11-20	Trans. prob., Oscill. Strengths	Th	634
Be Z= 6-8	Energy Levels, Wavelengths	Th	43
Be Z= 5-10	Energy Levels, Wavelengths	Th	55
Be Z= 6-92	Energy Levels, Wavelengths	Th	80
Be Z= 10-54	Energy Levels, Wavelengths	Th	140
Be Z= 10-26	Energy Levels, Wavelengths	Th	148
Be Z= 79-80	Energy Levels, Wavelengths	Th	148
Be Z= 16-22	Energy Levels, Wavelengths	Th	205
Be Z= 4-18	Energy Levels, Wavelengths	Th	225
Be Z= 20-30 step 2	Energy Levels, Wavelengths	Th	225
Be Z= 4-12	Energy Levels, Wavelengths	Th	233
Be Z= 4-10	Energy Levels, Wavelengths	Th	270
Be Z= 4-23	Energy Levels, Wavelengths	E/T	274
Be Z= 3-10	Energy Levels, Wavelengths	Th	294
Be Z= 6-92	Trans. prob., Oscill. Strengths	Th	383
Be Z= 4-28	Trans. prob., Oscill. Strengths	Th	417
Be Z= 10-18 step 2	Energy Levels, Wavelengths	Th	429
Be Z= 4-24	Energy Levels, Wavelengths	Th	440
Be Z= 4-12	Energy Levels, Wavelengths	Th	458
Be Z= 4-10	Energy Levels, Wavelengths	Th	472
Be Z= 4-9	Energy Levels, Wavelengths	Th	528
Be Z= 6-9	Trans. prob., Oscill. Strengths	Th	620
Be Z= 6-17	Trans. prob., Oscill. Strengths	Th	620
Be Z= 11-17	Trans. prob., Oscill. Strengths	Th	620
Be Z= 19-22	Trans. prob., Oscill. Strengths	Th	620
Be Z= 5-30	Trans. prob., Oscill. Strengths	Th	649
B Z= 16-22	Energy Levels, Wavelengths	Th	205
B Z= 5-19	Energy Levels, Wavelengths	E/T	231
B Z= 5-14	Energy Levels, Wavelengths	Th	233
B Z= 5-18	Energy Levels, Wavelengths	Th	253
B Z= 20-30 step 2	Energy Levels, Wavelengths	Th	253
B Z= 10-12	Energy Levels, Wavelengths	Th	301
B Z= 10-30	Energy Levels, Wavelengths	Th	320
B Z= 10-18 step 2	Energy Levels, Wavelengths	Th	429
B Z= 14-30	Energy Levels, Wavelengths	Th	475
B Z= 14-30	Trans. prob., Oscill. Strengths	Th	625
B Z= 6-8	Trans. prob., Oscill. Strengths	E/T	692
C Z= 6-10	Energy Levels, Wavelengths	Th	168
C Z= 6-30	Energy Levels, Wavelengths	Th	224
C Z= 6-15	Energy Levels, Wavelengths	Th	233
C Z= 19-25	Energy Levels, Wavelengths	Th	257
C Z= 6-23	Energy Levels, Wavelengths	E/T	258
C Z= 10-18 step 2	Energy Levels, Wavelengths	Th	429
C Z= 6-11	Energy Levels, Wavelengths	Th	500
C Z= 6-10	Trans. prob., Oscill. Strengths	E/T	690
N Z= 7-13	Energy Levels, Wavelengths	Th	111
N Z= 7-17	Energy Levels, Wavelengths	Th	233
N Z= 10-18 step 2	Energy Levels, Wavelengths	Th	429
N Z= 7-100	Energy Levels, Wavelengths	Th	483
O Z= 8-30	Energy Levels, Wavelengths	Th	222
O Z= 8-22	Energy Levels, Wavelengths	E/T	232
O Z= 8-20	Energy Levels, Wavelengths	Th	233
O Z= 10-18 step 2	Energy Levels, Wavelengths	Th	429
F Z= 9-22	Energy Levels, Wavelengths	Th	233
F Z= 9-30	Energy Levels, Wavelengths	Th	254

F Z= 10-18 step 2	Energy Levels, Wavelengths	Th	429
F Z= 10-30	Trans. prob., Oscill. Strengths	Th	649
Ne Z= 20-26	Energy Levels, Wavelengths	E/T	12
Ne Z= 10-30	Energy Levels, Wavelengths	Th	165
Ne Z= 50-54	Energy Levels, Wavelengths	Exp	191
Ne Z= 55-56	Energy Levels, Wavelengths	Exp	191
Ne Z= 26-38	Energy Levels, Wavelengths	Th	214
Ne Z= 10-24	Energy Levels, Wavelengths	Th	233
Ne Z= 11-18	Energy Levels, Wavelengths	Th	306
Ne Z= 10-18 step 2	Energy Levels, Wavelengths	Th	429
Ne Z= 32-63	Energy Levels, Wavelengths	Th	496
Na Z= 11-16	Energy Levels, Wavelengths	Th	106
Na Z= 50-54	Energy Levels, Wavelengths	Exp	191
Na Z= 55-56	Energy Levels, Wavelengths	Exp	191
Na Z= 11-30	Energy Levels, Wavelengths	Th	221
Na Z= 11-31	Energy Levels, Wavelengths	Th	440
Na Z= 72-74	Energy Levels, Wavelengths	Exp	456
Na Z= 28-29	Energy Levels, Wavelengths	Exp	548
Na Z= 12-36	Trans. prob., Oscill. Strengths	Th	583
Na Z= 11-14	Trans. prob., Oscill. Strengths	Th	623
Mg Z= 12-30	Energy Levels, Wavelengths	Th	163
Mg Z= 50-54	Energy Levels, Wavelengths	Exp	191
Mg Z= 12-28	Trans. prob., Oscill. Strengths	E/T	389
Mg Z= 12-16	Trans. prob., Oscill. Strengths	Th	397
Mg Z= 72-74	Energy Levels, Wavelengths	Exp	456
Al Z= 13-30	Energy Levels, Wavelengths	Th	119
Al Z= 13-80	Energy Levels, Wavelengths	E/T	256
Al Z= 15-100	Energy Levels, Wavelengths	Th	280
Al Z= 26-28	Trans. prob., Oscill. Strengths	Exp	338
Al Z= 26-31	Trans. prob., Oscill. Strengths	Th	385
Al Z= 13-29	Energy Levels, Wavelengths	Th	440
Al Z= 72-74	Energy Levels, Wavelengths	Exp	456
Al Z= 19-32	Energy Levels, Wavelengths	Th	457
Al Z= 19-32	Trans. prob., Oscill. Strengths	Th	613
Si Z= 53-54	Energy Levels, Wavelengths	Exp	191
Si Z= 26-28	Trans. prob., Oscill. Strengths	Exp	338
Si Z= 72-74	Energy Levels, Wavelengths	Exp	456
Si Z= 14-17	Energy Levels, Wavelengths	Th	500
P Z= 26-28	Trans. prob., Oscill. Strengths	Exp	338
S Z= 26-32	Energy Levels, Wavelengths	Th	63
S Z= 26-28	Trans. prob., Oscill. Strengths	Exp	338
Cl Z= 17-24	Trans. prob., Oscill. Strengths	Th	685
K Z= 22-54	Energy Levels, Wavelengths	E/T	539
K Z= 21-96	Energy Levels, Wavelengths	Th	559
Ni Z= 47-92	Energy Levels, Wavelengths	Th	115
Ni Z= 36-79	Energy Levels, Wavelengths	Th	156
Ni Z= 62-64	Energy Levels, Wavelengths	Th	201
Ni Z= 73-74	Energy Levels, Wavelengths	Th	201
Ni Z= 74-84 step 2	Energy Levels, Wavelengths	Th	286
Ni Z= 34-100	Trans. prob., Oscill. Strengths	Th	387
Ni Z= 47-92	Trans. prob., Oscill. Strengths	Th	411
Ni Z= 42-60	Trans. prob., Oscill. Strengths	Th	592
Cu Z= 29-33	Energy Levels, Wavelengths	Th	503
Zn Z= 30-47	Trans. prob., Oscill. Strengths	E/T	389
Zn Z= 70-92	Energy Levels, Wavelengths	Th	450
Zn Z= 30-36	Trans. prob., Oscill. Strengths	Th	636
Ga Z= 36-92	Energy Levels, Wavelengths	Th	90

Rb Z= 37-47	Trans. prob., Oscill. Strengths		Th	601
Pd Z= 54-59	Trans. prob., Oscill. Strengths		Th	374
Pd Z= 50-63	Trans. prob., Oscill. Strengths		Th	651
Pd Z= 54-58	Trans. prob., Oscill. Strengths		Th	661
Ag Z= 48-54	Energy Levels, Wavelengths		Th	289
Ag Z= 57-58	Energy Levels, Wavelengths		Th	289
Ag Z= 50-100	Energy Levels, Wavelengths		Th	449
Ag Z= 50-86	Trans. prob., Oscill. Strengths		Th	602
Cd Z= 48-59	Trans. prob., Oscill. Strengths		E/T	389
Tm Z= 79-83	Trans. prob., Oscill. Strengths		Th	670
Lu Z= 78-79	Trans. prob., Oscill. Strengths		Th	662
Hg Z= 80-92	Trans. prob., Oscill. Strengths		E/T	389

2.2 Atomic and Molecular Collisions

2.2.1 Photon Collisions

$h\nu + Ar_3$	Photodissociation	262 eV	Exp	698
$h\nu + Ar_3$	Photoionization	262 eV	Exp	698
$h\nu + N_2O$	Photoionization	410−600 eV	E/T	699
$h\nu + CO_2$	Photodissociation	800 nm	Exp	700
$h\nu + CO_2$	Photoionization	800 nm	Exp	700
$h\nu + N_2$	Photoionization	800 nm	Th	701
$h\nu + O_2$	Photoionization	800 nm	Th	701
$h\nu + C_2H_4$	Photoionization	800 nm	Th	701
$h\nu + C_6H_6$	Photoionization	800 nm	Th	701
$h\nu + H_2$	Photodissociation	71−76 nm	Th	702
$h\nu + H_2$	Photoexcitation	71−76 nm	Th	702
$h\nu + Ca^+$	Photoionization	30−80 eV	E/T	703
$h\nu + Ti^+$	Photoionization	30−80 eV	E/T	703
$h\nu + V^+$	Photoionization	30−80 eV	E/T	703
$h\nu + Cr^+$	Photoionization	30−80 eV	E/T	703
$h\nu + Mn^+$	Photoionization	30−80 eV	E/T	703
$h\nu + Fe^+$	Photoionization	30−80 eV	E/T	703
$h\nu + Co^+$	Photoionization	30−80 eV	E/T	703
$h\nu + Ni^+$	Photoionization	30−80 eV	E/T	703
$h\nu + Se^+$	Photoionization	30−80 eV	E/T	703
$h\nu + He$	Photoexcitation		Th	704
$h\nu + H_2{}^+$	Photodissociation	1.5−3 a.u.	Th	705
$h\nu + H_2{}^+$	Photoexcitation	1.5−3 a.u.	Th	705
$h\nu + H_2{}^+$	Photoionization	1.5−3 a.u.	Th	705
$h\nu + NO$	Photoionization	412 eV	E/T	706
$h\nu + H_2$	Photoionization	10^{14} W/cm^2	Th	707
$h\nu + He$	Photoionization	79.13−86.0 eV	Th	708
$h\nu + K^-$	Photodetachment	21−24.5 eV	Exp	709
$h\nu + Na$	Photoionization	40−69 eV	E/T	710
$h\nu + CO$	Photodissociation	800 nm	Exp	711
$h\nu + NO$	Photodissociation	800 nm	Exp	711
$h\nu + CO$	Photoionization	800 nm	Exp	711
$h\nu + NO$	Photoionization	800 nm	Exp	711
$h\nu + H_2O$	Photodissociation	15−50 eV	Exp	712
$h\nu + D_2O$	Photodissociation	15−50 eV	Exp	712
$h\nu + H_2O$	Photoionization	15−50 eV	Exp	712
$h\nu + D_2O$	Photoionization	15−50 eV	Exp	712
$h\nu + Kr$	Fluorescence	27.8−29.45 eV	Exp	713

hν + Kr	Photoionization	27.8−29.45 eV	Exp	713
hν + H^-	Photodetachment	0.75−1.1 eV	Th	714
hν + He	Photoionization	24−50 eV	Th	715
hν + Kr	Photoexcitation	90.8−92.9 eV	E/T	716
hν + Kr	Photoionization	90.8−92.9 eV	E/T	716
hν + He	Photoexcitation	78.85 eV	Th	717
hν + He	Photoionization	78.85 eV	Th	717
hν + CH_4	Fluorescence	287−406 eV	Exp	718
hν + NH_3	Fluorescence	287−406 eV	Exp	718
hν + CH_4	Photoexcitation	287−406 eV	Exp	718
hν + NH_3	Photoexcitation	287−406 eV	Exp	718
hν + A	Photoexcitation	10 MeV	Th	719
hν + Xe_2	Fluorescence	292−299 nm	Exp	720
hν + $Xe_2{}^*$	Fluorescence	292−299 nm	Exp	720
hν + $KrXe^*$	Fluorescence	292−299 nm	Exp	720
hν + Xe_2	Photoexcitation	292−299 nm	Exp	720
hν + $Xe_2{}^*$	Photoexcitation	292−299 nm	Exp	720
hν + $KrXe^*$	Photoexcitation	292−299 nm	Exp	720
hν + He	Photoionization	390−780 nm	Th	721
hν + $Li_2{}^+$	Photoionization	10−100 eV	Th	722
hν + $Na_2{}^+$	Photoionization	10−100 eV	Th	722
hν + $LiNa^+$	Photoionization	10−100 eV	Th	722
hν + C_3H_6	Total Absorption, Scattering	7−30 eV	E/T	723
hν + Kr	Photoionization	94.74−95.24 eV	Th	724
hν + H	Photoionization		Th	725
hν + H^*	Photoionization		Th	725
hν + Yb	Photoionization	3.8−2,000 eV	E/T	726
hν + CO	Photodissociation	6,700−20,500 cm^{-1}	Th	727
hν + N_2	Photodissociation	405−430 eV	Exp	728
hν + N_2	Photoexcitation	405−430 eV	Exp	728
hν + Mo	Total Absorption, Scattering	123.6 keV	E/T	729
hν + Ag	Total Absorption, Scattering	123.6 keV	E/T	729
hν + Cd	Total Absorption, Scattering	123.6 keV	E/T	729
hν + In	Total Absorption, Scattering	123.6 keV	E/T	729
hν + Sn	Total Absorption, Scattering	123.6 keV	E/T	729
hν + Mo	Fluorescence	123.6 keV	E/T	729
hν + Ag	Fluorescence	123.6 keV	E/T	729
hν + Cd	Fluorescence	123.6 keV	E/T	729
hν + In	Fluorescence	123.6 keV	E/T	729
hν + Sn	Fluorescence	123.6 keV	E/T	729
hν + RbF	Photoexcitation	14−21 eV	Exp	730
hν + RbCl	Photoexcitation	14−21 eV	Exp	730
hν + RbBr	Photoexcitation	14−21 eV	Exp	730
hν + RbI	Photoexcitation	14−21 eV	Exp	730
hν + Mg	Photoionization	3.3−4.7 eV	Exp	731
hν + Mg^*	Photoionization	3.3−4.7 eV	Exp	731
hν + Ba	Photoionization	404−388 nm	Exp	732
hν + Ba^*	Photoionization	404−388 nm	Exp	732
hν + Mg	Photoionization	7−12 eV	Exp	733
hν + In^+	Photoexcitation	0−135,000 cm^{-1}	Th	734
hν + HeH^+	Photoionization	40−80 eV	Th	735
hν + NO	Photoionization	400−560 eV	Exp	736
hν + Ne_2	Photodissociation	49.3−420 eV	Exp	737
hν + Ne_2	Photoionization	49.3−420 eV	Exp	737
hν + $H_2{}^+$	Photodissociation	790 nm	Exp	738
hν + $D_2{}^+$	Photodissociation	790 nm	Exp	738
hν + Kr	Photoionization	24−40 eV	Exp	739

hν + **Xe**	Photoionization	24−40 eV	Exp	739
hν + **He**	Photoionization	1083 nm	Exp	740
hν + $\mathbf{Mg}^{3+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{Al}^{4+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{Si}^{5+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{P}^{6+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{S}^{7+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{Cl}^{8+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{Ar}^{9+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{K}^{10+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{Ca}^{11+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{Sc}^{12+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{Ti}^{13+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{V}^{14+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{Cr}^{15+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{Mn}^{16+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{Fe}^{17+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{Co}^{18+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + $\mathbf{Ni}^{19+}$	Photoexcitation	10^3-10^9 K	Th	741
hν + **Zn**	Total Absorption, Scattering	5−200 keV	Th	742
hν + **Ag**	Total Absorption, Scattering	5−200 keV	Th	742
hν + **Pb**	Total Absorption, Scattering	5−200 keV	Th	742
hν + **Al**	Photoionization	5−200 keV	Th	742
hν + **Zn**	Photoionization	5−200 keV	Th	742
hν + **Ag**	Photoionization	5−200 keV	Th	742
hν + **Ba**	Photoionization	5−200 keV	Th	742
hν + **Pb**	Photoionization	5−200 keV	Th	742
hν + **U**	Photoionization	5−200 keV	Th	742
hν + **He**	Photoionization	41−48 eV	Th	743
hν + $\mathbf{Mg}^{7+}$	Photoexcitation	2×10^6-1×10^3 cm^{-1}	Th	744
hν + $\mathbf{Si}^{9+}$	Photoexcitation	2×10^6-1×10^3 cm^{-1}	Th	744
hν + $\mathbf{S}^{11+}$	Photoexcitation	2×10^6-1×10^3 cm^{-1}	Th	744
hν + $\mathbf{Kr}^{6+}$	Photoexcitation		Th	745
hν + **Mg**	Photoexcitation	15,000−62,000 cm^{-1}	Exp	746
hν + $\mathbf{CO}_2$	Photoionization	301−322 eV	Exp	747
hν + **Al**	Photoionization	98−115 eV	E/T	748
hν + **Ar**	Photoexcitation	246−249 eV	Exp	749
hν + **Ar**	Photoionization	246−249 eV	Exp	749
hν + **Xe**	Photoionization	80−300 eV	Exp	750
hν + $\mathbf{CH}_4$	Photodissociation	220−260 eV	Exp	751
hν + $\mathbf{CD}_4$	Photodissociation	220−260 eV	Exp	751
hν + $\mathbf{CH}_4$	Photoionization	220−260 eV	Exp	751
hν + $\mathbf{CD}_4$	Photoionization	220−260 eV	Exp	751
hν + **Li**	Photon Collisions	6.4−136 keV	Exp	752
hν + **C**	Photon Collisions	6.4−136 keV	Exp	752
hν + **O**	Photon Collisions	6.4−136 keV	Exp	752
hν + **Al**	Photon Collisions	6.4−136 keV	Exp	752
hν + **Ca**	Photon Collisions	6.4−136 keV	Exp	752
hν + **LiOH**	Photon Collisions	6.4−136 keV	Exp	752
hν + $\mathbf{CaCO}_3$	Photon Collisions	6.4−136 keV	Exp	752
hν + $\mathbf{NaNO}_3$	Photon Collisions	6.4−136 keV	Exp	752
hν + $\mathbf{NaNO}_2$	Photon Collisions	6.4−136 keV	Exp	752
hν + $\mathbf{C}_5\mathbf{H}_{10}\mathbf{O}_5$	Photon Collisions	6.4−136 keV	Exp	752
hν + $\mathbf{C}_6\mathbf{H}_{12}\mathbf{O}_6$	Photon Collisions	6.4−136 keV	Exp	752
hν + $\mathbf{C}_6\mathbf{H}_{12}\mathbf{O}_5\mathbf{H}_2\mathbf{O}$	Photon Collisions	6.4−136 keV	Exp	752
hν + $\mathbf{C}_{12}\mathbf{H}_{22}\mathbf{O}_{11}$	Photon Collisions	6.4−136 keV	Exp	752
hν + $\mathbf{C}_{18}\mathbf{H}_{32}\mathbf{O}_{16}\mathbf{H}_2\mathbf{O}$	Photon Collisions	6.4−136 keV	Exp	752

hν + $C_{18}H_{32}O_{16}5H_2O$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_2H_5NO_2$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_3H_7NO_2$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_3H_7NO_3$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_5H_{11}NO_2$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_4H_9NO_3$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_6H_{13}NO_2$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_4H_7NO_4$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_6H_{14}N_2O_2$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_5H_9NO_4$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_6H_9N_3O_2$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_9H_{11}NO_2$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_6H_{14}N_4O_2$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_9H_{11}NO_3$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_{11}H_{12}N_2O_2$	Photon Collisions	6.4−136 keV	Exp	752
hν + $C_6H_{12}N_2O_4S_2$	Photon Collisions	6.4−136 keV	Exp	752
hν + CO_2	Photoionization	0−180 eV	Th	753
hν + N_2	Photoionization	0−180 eV	Th	753
hν + Kr	Photoionization	104−280 eV	E/T	754
hν + C^{2+}	Photoionization	15−35 nm	Th	755
hν + C^{2+*}	Photoionization	15−35 nm	Th	755
hν + C_2H_2	Photodissociation	311 eV	Exp	756
hν + C_2H_2	Photoionization	311 eV	Exp	756
hν + Ba	Photoionization	790−850 eV	Exp	757
hν + CS_2	Photoionization	295−330 eV	E/T	758
hν + Ne	Photoionization		Exp	759
hν + P^-	Photodetachment	745 MeV	Exp	760
hν + Fr	Photoexcitation	10^{-5}-10^0 a.u.	Th	761
hν + Ra^+	Photoexcitation	10^{-5}-10^0 a.u.	Th	761
hν + Ac^{2+}	Photoexcitation	10^{-5}-10^0 a.u.	Th	761
hν + Th^{3+}	Photoexcitation	10^{-5}-10^0 a.u.	Th	761
hν + Pa^{4+}	Photoexcitation	10^{-5}-10^0 a.u.	Th	761
hν + U^{5+}	Photoexcitation	10^{-5}-10^0 a.u.	Th	761
hν + H	Photoionization	0.25−0.5 a.u.	Th	762
hν + Ne	Photoionization	30−200 eV	Th	763
hν + Ar	Photoionization	30−200 eV	Th	763
hν + H^-	Photoionization		Th	764
hν + He	Photoionization		Th	764
hν + $H_2{}^+$	Photodissociation	1.3×10^{15} W/cm^2	Exp	765
hν + He	Photoionization	76−99 eV	Th	766
hν + H_2	Photoionization	76−99 eV	Th	766
hν + Ni	Photoionization	205−49,314 cm^{-1}	Exp	767
hν + Ge	Photoionization	205−49,314 cm^{-1}	Exp	767
hν + Er^+	Photoexcitation	23,240−46,757 cm^{-1}	E/T	768
hν + $CS_2{}^+$	Photoexcitation	275−292 eV	Exp	769
hν + CS_2	Photoionization	275−292 eV	Exp	769
hν + Ar	Photoexcitation	247 eV	E/T	770
hν + Ar	Photoionization	247 eV	E/T	770
hν + Be	Photoexcitation	128−140 eV	E/T	771
hν + Be	Photoionization	128−140 eV	E/T	771
hν + Ar	Photon Collisions	3175−3250 eV	Th	772
hν + Ar	Elastic Scattering	3175−3250 eV	Th	772
hν + H_2	Photodissociation	2.7−13.6 eV	Th	773
hν + H_2	Elastic Scattering	2.7−13.6 eV	Th	773
hν + H_2	Photoionization	2.7−13.6 eV	Th	773
hν + H_2O	Total Absorption, Scattering	540−570 eV	Exp	774
hν + H_2O	Fluorescence	540−570 eV	Exp	774

hν + H_2O	Photoexcitation	540−570 eV	Exp	774
hν + H_2O	Photoionization	540−570 eV	Exp	774
hν + Li	Photoexcitation		Exp	775
hν + Fe^-	Photodetachment	1.92−2.71 eV	Exp	776
hν + Cu^-	Photodetachment	1.92−2.71 eV	Exp	776
hν + He	Photoionization		Th	777
hν + Xe	Photoionization	10−170 eV	Exp	778
hν + La^{3+}	Total Absorption, Scattering	70−130 eV	Exp	779
hν + La^{4+}	Total Absorption, Scattering	70−130 eV	Exp	779
hν + Na_2	Photodissociation	61 eV	Exp	780
hν + Na	Photoionization	61 eV	Exp	780
hν + Na_2	Photoionization	61 eV	Exp	780
hν + Rb_2	Total Absorption, Scattering	600−1100 nm	E/T	781
hν + Ar	Photoexcitation	10^{-2}-10 a.u.	Th	782
hν + Sn	Total Absorption, Scattering	25−60 keV	Exp	783
hν + CO	Photoionization		E/T	784
hν + Rb^+	Photoionization	24−160 eV	Exp	785
hν + Sr^{2+}	Photoionization	24−160 eV	Exp	785
hν + Xe	Photoionization	20−30 eV	Exp	786
hν + He	Photoionization	42−50 eV	Th	787
hν + Kr	Total Absorption, Scattering	14−17 keV	Th	788
hν + Kr	Photoionization	14−17 keV	Th	788
hν + Xe_2	Photodissociation	800 nm	Exp	789
hν + I_2	Photodissociation	800 nm	Exp	789
hν + Xe_2	Photoionization	800 nm	Exp	789
hν + I_2	Photoionization	800 nm	Exp	789
hν + $H_2{}^+$	Photodissociation	0.7−0.8 a.u.	Th	790
hν + $H_2{}^+$	Photoionization	0.7−0.8 a.u.	Th	790
hν + Li	Photoexcitation		Th	791
hν + $H_2{}^+$	Photoionization	5×10^{13} W/cm^2	Th	792
hν + NaRb	Fluorescence	770−477 nm	E/T	793
hν + LiCs	Fluorescence	15.53−17.24$\times 10^3$ cm^{-1}	E/T	794
hν + Li	Photoionization	207−318 eV	Th	795
hν + Be	Photoionization	18−48 eV	Th	796
hν + Mg	Photoionization	18−48 eV	Th	796
hν + Ca	Photoionization	18−48 eV	Th	796
hν + N_2	Photoionization	412.5−433.5 eV	Exp	797
hν + $H_2{}^*$	Photodissociation	3−14 eV	Th	798
hν + H_2	Photoionization	3−14 eV	Th	798
hν + $H_2{}^*$	Photoionization	3−14 eV	Th	798
hν + As^-	Photodetachment	715−532 nm	Exp	799
hν + H^-	Photoionization	14.3−50 eV	Th	800
hν + Xe	Photoionization	49.5−58 eV	Th	801
hν + Xe + C_{60}	Photoionization	49.5−58 eV	Th	801
hν + N_2	Photoionization	0.7−4$\times 10^{14}$ W/cm^2	Exp	802
hν + O_2	Photoionization	0.7−4$\times 10^{14}$ W/cm^2	Exp	802
hν + H	Photoionization	10^{13}-10^{16} W/cm^2	Th	803
hν + CH_4	Photodissociation	1.4×10^{14} W/cm^2	Exp	804
hν + C_2H_6	Photodissociation	1.4×10^{14} W/cm^2	Exp	804
hν + C_3H_8	Photodissociation	1.4×10^{14} W/cm^2	Exp	804
hν + CH_4	Photoionization	1.4×10^{14} W/cm^2	Exp	804
hν + C_2H_6	Photoionization	1.4×10^{14} W/cm^2	Exp	804
hν + C_3H_8	Photoionization	1.4×10^{14} W/cm^2	Exp	804
hν + He	Photoionization	38.4−42.8 eV	Exp	805
hν + Ne	Photoionization	38.4−42.8 eV	Exp	805
hν + Ne^+	Photoionization	38.4−42.8 eV	Exp	805
hν + Ne^{2+}	Photoionization	38.4−42.8 eV	Exp	805

hν + He	Photoionization	38.5 eV	Exp	806
hν + Na	Photoionization	77−600 K	E/T	807
hν + Na*	Photoionization	77−600 K	E/T	807
hν + Rb	Photoionization	77−600 K	E/T	807
hν + Rb*	Photoionization	77−600 K	E/T	807
hν + H_2	Photoionization	11,442−11,456 cm^{-1}	E/T	808
hν + H^-	Photoionization	15−30 eV	Th	809
hν + Ar^{5+}	Photoionization	50−350 eV	Exp	811
hν + $H_2{}^+$	Photoionization	1−5 a.u.	Exp	812
hν + I_2	Photoionization	780 nm	Exp	813
hν + Be^{3+}	Photoionization	4−8 a.u.	Th	814
hν + $O_2{}^+$	Photodissociation	790 nm	Exp	815
hν + H	Photoionization	0−80 eV	Th	816
hν + $H_2{}^+$	Photoionization	0−80 eV	Th	816
hν + $H_2{}^+$	Photoionization		Th	817
hν + N_2O	Photoionization	410−465 eV	E/T	818
hν + Ne	Photoionization	60−240 eV	Exp	819
hν + Mg	Photoionization	106−335 nm	Th	820
hν + Mg*	Photoionization	106−335 nm	Th	820
hν + H_2	Photodissociation	600−1200 nm	Th	821
hν + D_2	Photodissociation	600−1200 nm	Th	821
hν + H_2	Photoionization	600−1200 nm	Th	821
hν + D_2	Photoionization	600−1200 nm	Th	821
hν + H_2	Photoionization	800−1850 nm	Th	822
hν + D_2	Photoionization	800−1850 nm	Th	822
hν + N_2	Photoionization	800−1850 nm	Th	822
hν + F^-	Photodetachment	0.03 a.u.	Th	823
hν + CO_2	Fluorescence	541 eV	Exp	824
hν + CO_2	Photoexcitation	541 eV	Exp	824
hν + CH_3	Total Absorption, Scattering	282 eV	E/T	825
hν + CH_3	Fluorescence	282 eV	E/T	825
hν + CH_3	Photoexcitation	282 eV	E/T	825
hν + H_2	Photodissociation	800 nm	Th	826
hν + N_2	Photodissociation	800 nm	Th	826
hν + H_2	Photoionization	800 nm	Th	826
hν + N_2	Photoionization	800 nm	Th	826
hν + $H_2{}^+$	Photodissociation	750 nm	Th	827
hν + HD^+	Photodissociation	750 nm	Th	827
hν + $H_2{}^+$	Photoionization	750 nm	Th	827
hν + HD^+	Photoionization	750 nm	Th	827
hν + NO	Photoexcitation	2.8×10^{12} W/cm^2	E/T	828
hν + H_2	Photodissociation	800 nm	Exp	829
hν + D_2	Photodissociation	800 nm	Exp	829
hν + H_2	Photoexcitation	800 nm	Exp	829
hν + D_2	Photoexcitation	800 nm	Exp	829
hν + H_2	Photoionization	800 nm	Exp	829
hν + D_2	Photoionization	800 nm	Exp	829
hν + I^-	Photodetachment	0−8 eV	Th	830
hν + He	Photoionization	45 eV	Th	831
hν + He	Photoionization	40−55 eV	Th	832
hν + C_2H_4	Fluorescence	280−290 eV	Exp	833
hν + C_6H_6	Fluorescence	280−290 eV	Exp	833
hν + C_2H_4	Photoexcitation	280−290 eV	Exp	833
hν + C_6H_6	Photoexcitation	280−290 eV	Exp	833
hν + Xe	Fluorescence	4090−4805 eV	Exp	834
hν + Xe	Photoexcitation	4090−4805 eV	Exp	834
hν + C_4F_8	Total Absorption, Scattering	100 eV	Exp	835

hν + C-C_4F_8	Total Absorption, Scattering	100 eV	Exp	835
hν + C_4F_8	Photoionization	100 eV	Exp	835
hν + C-C_4F_8	Photoionization	100 eV	Exp	835
hν + Be	Photoionization	17−22 eV	Exp	836
hν + Cr^+	Photoionization	40−41 eV	Th	837
hν + Xe	Photoionization	220.3 eV	Exp	838
hν + Na	Photoionization	0−1 a.u.	Th	839
hν + K	Photoionization	0−1 a.u.	Th	839
hν + Rb	Photoionization	0−1 a.u.	Th	839
hν + Cs	Photoionization	0−1 a.u.	Th	839
hν + B^-	Photodetachment	187−195 eV	E/T	840
hν + H_2	Photoionization	10−20 eV	Th	841
hν + F^-	Photodetachment	0−20 eV	Th	842
hν + $H_2{}^+$	Photodissociation	2×10^{14}-6×10^{14} W/cm^2	Th	843
hν + $D_2{}^+$	Photodissociation	2×10^{14}-6×10^{14} W/cm^2	Th	843
hν + Ne	Photoionization	1 keV	Th	844
hν + $B_2{}^-$	Photodissociation	180−220 eV	E/T	845
hν + $B_3{}^-$	Photodissociation	180−220 eV	E/T	845
hν + $B_2{}^-$	Photodetachment	180−220 eV	E/T	845
hν + $B_3{}^-$	Photodetachment	180−220 eV	E/T	845
hν + OH^-	Photodetachment	440−266 nm	Exp	846
hν + H	Photoionization	5×10^{13}-5×10^{14} W/cm^2	Th	847
hν + Ar	Photoionization	0.25−2$\times 10^{14}$ W/cm^2	Th	848
hν + $H_2{}^+$	Photodissociation	1−3$\times 10^{14}$ W/cm^2	Th	849
hν + $H_2{}^+$	Photoionization	1−3$\times 10^{14}$ W/cm^2	Th	849
hν + NO	Photoexcitation	325−330 nm	Exp	850
hν + NO^*	Photoexcitation	325−330 nm	Exp	850
hν + NO	Photoionization	325−330 nm	Exp	850
hν + NO^*	Photoionization	325−330 nm	Exp	850
hν + H	Photoionization	13.6−40 eV	Th	851
hν + Kr^+	Fluorescence	14.36 keV	Exp	852
hν + Kr^{2+}	Fluorescence	14.36 keV	Exp	852
hν + D^-	Photodetachment	10.92−11.04 eV	Exp	853
hν + Ce^-	Photodetachment	0.61−0.75 eV	E/T	854
hν + O^-	Photodetachment	532 nm	E/T	855
hν + Li	Photoionization	3−8 cm^{-1} above threshold	Th	856
hν + He	Photoionization	390 nm	Th	857
hν + H	Photoionization	0−620 eV	Th	858
hν + He	Photoionization	0−620 eV	Th	858
hν + Li	Photoionization	0−620 eV	Th	858
hν + Be	Photoionization	0−620 eV	Th	858
hν + CO	Total Absorption, Scattering	297−304 eV	Exp	859
hν + CO	Photoionization	297−304 eV	Exp	859
hν + He	Photoionization	25−54 eV	Th	860
hν + $H_2{}^+$	Photoionization		Th	861
hν + He	Photoionization	2.8 keV	Th	862
hν + H_2	Photoionization	2×10^{14}-2×10^{15} W/cm^2	E/T	863
hν + Xe	Photoionization	12.7 eV	Th	864
hν + He	Photoionization	44−58 eV	Th	865
hν + Au	Fluorescence	5.98 keV	E/T	866
hν + Bi	Fluorescence	5.98 keV	E/T	866
hν + Th	Fluorescence	5.98 keV	E/T	866
hν + U	Fluorescence	5.98 keV	E/T	866
hν + Au	Photoionization	5.98 keV	E/T	866
hν + Bi	Photoionization	5.98 keV	E/T	866
hν + Th	Photoionization	5.98 keV	E/T	866
hν + U	Photoionization	5.98 keV	E/T	866

hν + HBr	Photoionization	59.4−78 eV	Exp	867
hν + He	Photoionization	12.5−65 eV	Th	868
hν + Kr	Fluorescence	909.8−92.8 eV	Exp	869
hν + Kr	Photoexcitation	909.8−92.8 eV	Exp	869
hν + H	Photoionization	1.36 eV	Th	870
hν + He	Photoionization	79.5 nm	Th	871
hν + N_2	Photodissociation	820 nm	Exp	872
hν + N_2	Photoionization	820 nm	Exp	872
hν + $H_2{}^+$	Photodissociation	785 nm	Th	873
hν + K_2	Photoexcitation	845 nm	Th	874
hν + Be	Photoionization	57.49 eV	Th	875
hν + H	Photoionization	6−8 cm^{-1}	Th	876
hν + Si	Photoionization	140 eV	E/T	877
hν + Li	Photoionization	5.4−8.4 eV	Exp	878
hν + Li^*	Photoionization	5.4−8.4 eV	Exp	878
hν + PbF	Photoionization	2.3−2.8 eV	Exp	879
hν + Ar	Photoionization	33,250−35,420 cm^{-1}	E/T	880
hν + Ar^*	Photoionization	33,250−35,420 cm^{-1}	E/T	880
hν + He	Photoionization	5.6 keV	Th	881
hν + $H_2{}^+$	Photoexcitation	10.6 μ m	Th	882
hν + $H_2{}^+$	Photoexcitation	4−14 a.u.	Th	883
hν + $H_2{}^+$	Photoionization	4−14 a.u.	Th	883
hν + NH^+	Photodissociation	1.55 eV	Exp	884
hν + ND^+	Photodissociation	1.55 eV	Exp	884
hν + Xe	Photoionization	8−210 eV	E/T	885
hν + OCS	Photoionization	220−250 eV	Exp	886
hν + Ne^{2+}	Photoionization	485−2000 nm	Exp	887
hν + Ar^{2+}	Photoionization	485−2000 nm	Exp	887
hν + He	Photoionization	5−60 eV	Th	888
hν + He^*	Photoionization	5−60 eV	Th	888
hν + Kr	Photoexcitation	115,700−117,800 cm^{-1}	Exp	889
hν + Kr^*	Photoexcitation	115,700−117,800 cm^{-1}	Exp	889
hν + Kr	Photoionization	115,700−117,800 cm^{-1}	Exp	889
hν + Kr^*	Photoionization	115,700−117,800 cm^{-1}	Exp	889
hν + Cs	Photoexcitation	49.5−45.5 eV	E/T	890
hν + Cs	Photoionization	49.5−45.5 eV	E/T	890
hν + Cs	Photoexcitation	78−84 eV	E/T	891
hν + Cs	Photoionization	78−84 eV	E/T	891
hν + H_2	Photodissociation	24−60 eV	E/T	892
hν + D_2	Photodissociation	24−60 eV	E/T	892
hν + H_2	Fluorescence	24−60 eV	E/T	892
hν + D_2	Fluorescence	24−60 eV	E/T	892
hν + Kr	Photoionization	94.74−100.04 eV	E/T	893
hν + NO	Photoionization	412−415 eV	E/T	894
hν + N_2	Fluorescence	400−403 eV	E/T	895
hν + N_2	Photoexcitation	400−403 eV	E/T	895
hν + Sr	Photoionization	710−740 nm	Exp	896
hν + He	Photoionization	25−110 eV	Th	897
hν + He	Photoionization	10^{12} W/cm^2	E/T	898
hν + He	Photoionization	127 eV	E/T	899
hν + Sc	Fluorescence	400−43,000 cm^{-1}	Exp	900
hν + Ti^{3+}	Photoexcitation	300−21,000 cm^{-1}	Th	901
hν + Ne	Photoionization	3−5.5 eV	Th	902
hν + Ne^*	Photoionization	3−5.5 eV	Th	902
hν + Xe	Photoionization	29−38 eV	Exp	903
hν + $H_2{}^+$	Photodissociation	3×10^{12} W/cm^2	Th	904
hν + Ne	Photoionization	795 nm	Exp	905

hν + $\mathbf{O_3}$	Total Absorption, Scattering	350−1200 K	Th	906
hν + $\mathbf{O_3}^*$	Total Absorption, Scattering	350−1200 K	Th	906
hν + $\mathbf{O_3}$	Photoexcitation	350−1200 K	Th	906
hν + $\mathbf{O_3}^*$	Photoexcitation	350−1200 K	Th	906
hν + **NO**	Photoionization	412−419 eV	Exp	907
hν + $\mathbf{NO}^*$	Photoionization	412−419 eV	Exp	907
hν + $\mathbf{H_2}^+$	Photoionization	65 eV	Th	908
hν + **He**	Photoionization	40−54 eV	E/T	909
hν + $\mathbf{O_2}$	Photoionization	554−594 eV	E/T	910
hν + **Xe**	Photoionization	97.45 eV	Exp	911
hν + $\mathbf{Ne_2}$	Photoionization	881.2 eV	Exp	912
hν + $\mathbf{C_{60}}$	Photoionization	10−90 eV	Th	913
hν + $\mathbf{C_3H_6}$	Total Absorption, Scattering	5−29 eV	E/T	914
hν + $\mathbf{C_2H_4O}$	Total Absorption, Scattering	5−29 eV	E/T	914
hν + $\mathbf{C_2H_4S}$	Total Absorption, Scattering	5−29 eV	E/T	914
hν + **Na**	Elastic Scattering	10^{-6}-10^{-5} a.u.	Exp	915
hν + $\mathbf{Ne^+}$	Photoionization	25−40 eV	Th	916
hν + $\mathbf{H_2}$	Photoionization	30 eV	Th	917
hν + $\mathbf{O_2}$	Photoionization	542−546 eV	E/T	918
hν + $\mathbf{Xe^{26+}}$	Photoexcitation	10−1500 eV	Th	919
hν + $\mathbf{S^{12+}}$	Photoexcitation	10−225 Ry	Th	920
hν + $\mathbf{Fe^{7+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Fe^{15+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Fe^{23+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Fe^{24+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Fe^{25+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Ni^{9+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Ni^{17+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Ni^{25+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Ni^{26+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Ni^{27+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Cu^{10+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Cu^{18+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Cu^{26+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Cu^{27+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Cu^{28+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Mo^{5+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Mo^{13+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Mo^{23+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Mo^{31+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Mo^{39+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Mo^{40+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Mo^{41+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{W^{5+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{W^{27+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{W^{37+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{W^{45+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{W^{55+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{W^{63+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{W^{71+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{W^{72+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{W^{73+}}$	Photoionization	4−50,000 eV	Th	921
hν + $\mathbf{Xe^{3+}}$	Photoexcitation	100,000−10,000 Å	Th	922
hν + $\mathbf{Ar^{14+}}$	Photoexcitation	10−300 Ry	Th	923
hν + $\mathbf{Kr^{27+}}$	Photoexcitation		Th	924
hν + $\mathbf{Kr^{28+}}$	Photoexcitation		Th	924
hν + $\mathbf{Kr^{29+}}$	Photoexcitation		Th	924

hν + Kr^{30+}	Photoexcitation		Th	924
hν + Kr^{31+}	Photoexcitation		Th	924
hν + S	Photoexcitation		Th	925
hν + Co^{10+}	Photoexcitation	0−14 Ry	Th	926
hν + Ra	Photoexcitation	8000−2700 $\AA$	Th	927
hν + Ra^{+}	Photoexcitation	8000−2700 $\AA$	Th	927
hν + Ac	Photoexcitation	8000−2700 $\AA$	Th	927
hν + Ac^{+}	Photoexcitation	8000−2700 $\AA$	Th	927
hν + Ni^{10+}	Photoexcitation	10^2-10^7 K	Th	928
hν + Sc^{+}	Photoexcitation	8390−8270 $\AA$	E/T	929
hν + H	Photoionization	0.0−3.0 a.u.	Th	930
hν + Cr	Photoexcitation	9700−2700 $\AA$	Exp	931
hν + NH_3	Photoexcitation	144−110 nm	Exp	932
hν + ND_3	Photoexcitation	144−110 nm	Exp	932
hν + NH_2D	Photoexcitation	144−110 nm	Exp	932
hν + NHD_2	Photoexcitation	144−110 nm	Exp	932
hν + CH^{+}	Photodissociation	32,000 cm^{-1}	Exp	933
hν + CD^{+}	Photodissociation	32,000 cm^{-1}	Exp	933
hν + CO	Photoexcitation	200 nm	E/T	934
hν + C_2	Photoexcitation	2300 $\AA$	Th	935
hν + O_2	Photoionization	535−545 eV	E/T	936
hν + O	Photoionization	12−26 eV	Exp	937
hν + S	Photoionization	73,350−84,950 cm^{-1}	Exp	938
hν + H_2	Photoexcitation	81−72 nm	Exp	939
hν + N_2	Photoexcitation	93.5−89.7 nm	Exp	940
hν + Ge	Photoexcitation	35,000−320,000 cm^{-1}	Th	941
hν + Sn	Photoexcitation	35,000−320,000 cm^{-1}	Th	941
hν + Pb	Photoexcitation	35,000−320,000 cm^{-1}	Th	941
hν + Uuq	Photoexcitation	35,000−320,000 cm^{-1}	Th	941
hν + KrH^{+}	Photodissociation	60,000−140,000 cm^{-1}	Th	942
hν + He	Photoionization	30−80 keV	Th	943
hν + Ti	Total Absorption, Scattering	4.0−5.9 keV	Exp	944
hν + Ar	Total Absorption, Scattering	5−110 keV	Exp	945
hν + Xe	Total Absorption, Scattering	5−110 keV	Exp	945
hν + CH_4	Total Absorption, Scattering	5−110 keV	Exp	945
hν + H_2	Photoionization	60 MeV; 2.4 keV; 0−20 a.u.	Th	946
hν + $H_2{}^{+}$	Photoionization	60 MeV; 2.4 keV; 0−20 a.u.	Th	946
hν + Be	Elastic Scattering	10−450 keV	Th	947
hν + Cu	Elastic Scattering	10−450 keV	Th	947
hν + U	Elastic Scattering	10−450 keV	Th	947
hν + A	Elastic Scattering	1-10^4 keV	Th	948
hν + Cr	Fluorescence	60−124 keV	Exp	949
hν + Fe	Fluorescence	60−124 keV	Exp	949
hν + Co	Fluorescence	60−124 keV	Exp	949
hν + Cu	Fluorescence	60−124 keV	Exp	949
hν + Zn	Fluorescence	60−124 keV	Exp	949
hν + Ga	Fluorescence	60−124 keV	Exp	949
hν + Se	Fluorescence	60−124 keV	Exp	949
hν + Y	Fluorescence	60−124 keV	Exp	949
hν + Mo	Fluorescence	60−124 keV	Exp	949
hν + Cd	Fluorescence	60−124 keV	Exp	949
hν + In	Fluorescence	60−124 keV	Exp	949
hν + Sn	Fluorescence	60−124 keV	Exp	949
hν + Te	Fluorescence	60−124 keV	Exp	949
hν + Ba	Fluorescence	60−124 keV	Exp	949
hν + Ta	Fluorescence	60−124 keV	Exp	949

hν + W	Fluorescence	60−124 keV	Exp	949
hν + Bi	Fluorescence	60−124 keV	Exp	949
hν + Cr	Photoionization	60−124 keV	Exp	949
hν + Fe	Photoionization	60−124 keV	Exp	949
hν + Co	Photoionization	60−124 keV	Exp	949
hν + Cu	Photoionization	60−124 keV	Exp	949
hν + Zn	Photoionization	60−124 keV	Exp	949
hν + Ga	Photoionization	60−124 keV	Exp	949
hν + Se	Photoionization	60−124 keV	Exp	949
hν + Y	Photoionization	60−124 keV	Exp	949
hν + Mo	Photoionization	60−124 keV	Exp	949
hν + Cd	Photoionization	60−124 keV	Exp	949
hν + In	Photoionization	60−124 keV	Exp	949
hν + Sn	Photoionization	60−124 keV	Exp	949
hν + Te	Photoionization	60−124 keV	Exp	949
hν + Ba	Photoionization	60−124 keV	Exp	949
hν + Ta	Photoionization	60−124 keV	Exp	949
hν + W	Photoionization	60−124 keV	Exp	949
hν + Bi	Photoionization	60−124 keV	Exp	949
hν + Bi	Elastic Scattering	88 keV	Exp	950
hν + Au	Total Absorption, Scattering	1−100 keV	Th	951
hν + Au	Photoionization	1−100 keV	Th	951
hν + K	Total Absorption, Scattering	3600−4200 eV	Exp	952
hν + He	Photoionization	800 nm	Exp	953
hν + He	Photoionization	800 nm	Exp	954
hν + Mn^{12+}	Photoexcitation		Th	955
hν + H	Photoionization		Th	956
hν + Tm	Photoionization	23−38 eV	E/T	957
hν + Ne^+	Photoionization	25−40 eV	Th	958
hν + Eu	Photoionization	165−310 eV	E/T	959
hν + H_2	Photodissociation	790 nm	Exp	960
hν + HD^+	Photodissociation	790 nm	Exp	960
hν + H_2	Photoionization	790 nm	Exp	960
hν + HD^+	Photoionization	790 nm	Exp	960
hν + Ne	Photoionization	867.1 eV	Th	961
hν + Ne	Photoexcitation	900−904 eV	Exp	962
hν + Ne	Photoionization	900−904 eV	Exp	962
hν + Nd^-	Photodetachment	2.41 eV	Th	963
hν + He	Fluorescence	64−65 eV	E/T	964
hν + N_2O	Photoionization	532−542 eV	E/T	965
hν + He	Photoexcitation	0.05−1000 eV	Th	966
hν + Li^+	Photoexcitation	0.05−1000 eV	Th	966
hν + C^{4+}	Photoexcitation	0.05−1000 eV	Th	966
hν + Ne^{8+}	Photoexcitation	0.05−1000 eV	Th	966
hν + Ba^{2+}	Photoexcitation	0.05−1000 eV	Th	966
hν + He	Photoionization	0.05−1000 eV	Th	966
hν + Li^+	Photoionization	0.05−1000 eV	Th	966
hν + C^{4+}	Photoionization	0.05−1000 eV	Th	966
hν + Ne^{8+}	Photoionization	0.05−1000 eV	Th	966
hν + Ba^{2+}	Photoionization	0.05−1000 eV	Th	966
hν + H_2	Photoionization	800 nm	Th	967
hν + Sc	Photoionization	25−45 eV	Th	968
hν + CO	Photodissociation	60−1400 eV	Exp	969
hν + CO	Photoexcitation	60−1400 eV	Exp	969
hν + CO	Photoionization	60−1400 eV	Exp	969
hν + K	Photoionization	10−3.3 μ m	Exp	970
hν + ${H_2}^+$	Photodissociation	400 nm	Th	971

$\mathbf{h\nu + H}$	Photoionization	10^{12}-10^{16} W/cm^2	Th	972
$\mathbf{h\nu + He}$	Photoionization	40−54 eV	Th	973
$\mathbf{h\nu + He}$	Photoionization	39.5−54 eV	Th	974
$\mathbf{h\nu + Eu^{2+}}$	Photoexcitation	10,000−2,000 $\mathring{A}$	Th	975
$\mathbf{h\nu + NaK}$	Photoexcitation		Exp	976
$\mathbf{h\nu + Li_2}$	Photoexcitation		E/T	977
$\mathbf{h\nu + N_2}$	Photodissociation	500−600 eV	Th	978
$\mathbf{h\nu + N_2}$	Photoionization	500−600 eV	Th	978
$\mathbf{h\nu + Ar}$	Photoexcitation	249 eV	E/T	979
$\mathbf{h\nu + HCl}$	Photodissociation	195−260 eV	Exp	980
$\mathbf{h\nu + HCl}$	Photoionization	195−260 eV	Exp	980
$\mathbf{h\nu + NO}$	Total Absorption, Scattering	13−21 eV	Exp	981
$\mathbf{h\nu + NO}$	Photodissociation	13−21 eV	Exp	981
$\mathbf{h\nu + Ne}$	Photoionization	800−400 nm	Th	982
$\mathbf{h\nu + Ar}$	Photoionization	800−400 nm	Th	982
$\mathbf{h\nu + Ti^{5+}}$	Photoexcitation	10^{-4}-1 (unitless)	Th	983
$\mathbf{h\nu + Al^{+}}$	Photoionization	20−50 eV	Th	984
$\mathbf{h\nu + Sr}$	Photoionization	25.26 eV	Exp	985
$\mathbf{h\nu + Ne}$	Photoionization	28−110 eV	Th	986
$\mathbf{h\nu + Ar}$	Photoionization	28−110 eV	Th	986
$\mathbf{h\nu + H}$	Photoionization	10^{-2}-10^{5} a.u.	Th	987
$\mathbf{h\nu + H^{*}}$	Photoionization	10^{-2}-10^{5} a.u.	Th	987
$\mathbf{h\nu + Rb_2}$	Photodissociation	750−785 nm	Exp	988
$\mathbf{h\nu + Rb_2}$	Photoexcitation	750−785 nm	Exp	988
$\mathbf{h\nu + C_{60}}$	Photoionization	50−290 eV	Th	989
$\mathbf{h\nu + N_2}$	Photoionization	800 nm	E/T	990
$\mathbf{h\nu + O_2}$	Photoionization	800 nm	E/T	990
$\mathbf{h\nu + D_2{}^{+}}$	Photoexcitation	750 nm	Th	991
$\mathbf{h\nu + He}$	Photoionization	800−483 nm	Th	992
$\mathbf{h\nu + Tm}$	Photoionization	502.4 eV	E/T	993
$\mathbf{h\nu + CO}$	Photoionization	287.4−287.66 eV	Exp	994
$\mathbf{h\nu + KCl}$	Photoionization	316.5−325 eV	Exp	995
$\mathbf{h\nu + KI}$	Photoionization	316.5−325 eV	Exp	995
$\mathbf{h\nu + KBr}$	Photoionization	316.5−325 eV	Exp	995
$\mathbf{h\nu + CH_2Cl_2}$	Photodissociation	800 nm	Exp	996
$\mathbf{h\nu + N_2}$	Photoionization	420−480 eV	Exp	997
$\mathbf{h\nu + I}$	Photoexcitation	9.48−9.86 eV	Exp	998
$\mathbf{h\nu + I}$	Photoionization	9.48−9.86 eV	Exp	998
$\mathbf{h\nu + Bi}$	Fluorescence	10.01−17.48 keV	Exp	999
$\mathbf{h\nu + CH_4}$	Photodissociation	800 nm	Exp	1000
$\mathbf{h\nu + CH_4}$	Fluorescence	800 nm	Exp	1000
$\mathbf{h\nu + CH_4}$	Photoionization	800 nm	Exp	1000
$\mathbf{h\nu + Ce^{5+}}$	Total Absorption, Scattering	70−120 eV	Exp	1001
$\mathbf{h\nu + Ce^{6+}}$	Total Absorption, Scattering	70−120 eV	Exp	1001
$\mathbf{h\nu + Ce^{7+}}$	Total Absorption, Scattering	70−120 eV	Exp	1001
$\mathbf{h\nu + Ce^{8+}}$	Total Absorption, Scattering	70−120 eV	Exp	1001
$\mathbf{h\nu + Ce^{9+}}$	Total Absorption, Scattering	70−120 eV	Exp	1001
$\mathbf{h\nu + Cd_2}$	Fluorescence	220−230 nm	Exp	1002
$\mathbf{h\nu + Cd_2}$	Photoexcitation	220−230 nm	Exp	1002
$\mathbf{h\nu + Na}$	Fluorescence	60−105 eV	Exp	1003
$\mathbf{h\nu + Mg}$	Fluorescence	60−105 eV	Exp	1003
$\mathbf{h\nu + Na}$	Photoexcitation	60−105 eV	Exp	1003
$\mathbf{h\nu + Mg}$	Photoexcitation	60−105 eV	Exp	1003
$\mathbf{h\nu + Na_2{}^{+}}$	Photodissociation	800 nm	Exp	1004
$\mathbf{h\nu + Na_2{}^{+}}$	Photoionization	800 nm	Exp	1004
$\mathbf{h\nu + Ar}$	Photoexcitation	6−120 eV	Exp	1005
$\mathbf{h\nu + Ar}$	Photoionization	6−120 eV	Exp	1005

hν + $\mathbf{O_2}$	Photoexcitation	540−543 eV	Th	1006
hν + $\mathbf{O_2}$	Photoionization	540−543 eV	Th	1006
hν + $\mathbf{Li_2}^+$	Photoionization	2−20 eV	Th	1007
hν + $\mathbf{Li_2}$	Photoexcitation	992−1028 nm	Th	1008
hν + $\mathbf{H}^-$	Photodetachment	0.0043−0.0253 a.u.	Th	1009
hν + $\mathbf{F}^-$	Photodetachment	0.0043−0.0253 a.u.	Th	1009
hν + $\mathbf{O_2}$	Photoionization	605−650 eV	Exp	1010
hν + $\mathbf{H_2}^+$	Photodissociation	800 nm	E/T	1011
hν + $\mathbf{D_2}^+$	Photodissociation	800 nm	E/T	1011
hν + **He**	Photoionization	0.055−0.187 a.u.	Th	1012
hν + $\mathbf{H_2O}$	Photodissociation	800 nm	Exp	1013
hν + $\mathbf{H_2O}$	Photoionization	800 nm	Exp	1013
hν + **He**	Photoionization	41.8 eV	E/T	1014
hν + **H**	Photoionization	0.6−2 $\omega(a.\mathrm{u.})$	Th	1015
hν + **C**	Fluorescence		Th	1016
hν + $\mathbf{N}^+$	Fluorescence		Th	1016
hν + $\mathbf{O}^{2+}$	Fluorescence		Th	1016
hν + $\mathbf{F}^{3+}$	Fluorescence		Th	1016
hν + $\mathbf{Ne}^{4+}$	Fluorescence		Th	1016
hν + $\mathbf{Na}^{5+}$	Fluorescence		Th	1016
hν + $\mathbf{Mg}^{6+}$	Fluorescence		Th	1016
hν + $\mathbf{Al}^{7+}$	Fluorescence		Th	1016
hν + $\mathbf{Si}^{8+}$	Fluorescence		Th	1016
hν + $\mathbf{P}^{9+}$	Fluorescence		Th	1016
hν + $\mathbf{S}^{10+}$	Fluorescence		Th	1016
hν + $\mathbf{Cl}^{11+}$	Fluorescence		Th	1016
hν + $\mathbf{Ar}^{12+}$	Fluorescence		Th	1016
hν + $\mathbf{K}^{13+}$	Fluorescence		Th	1016
hν + $\mathbf{Ca}^{14+}$	Fluorescence		Th	1016
hν + $\mathbf{Sc}^{15+}$	Fluorescence		Th	1016
hν + $\mathbf{Ti}^{16+}$	Fluorescence		Th	1016
hν + $\mathbf{V}^{17+}$	Fluorescence		Th	1016
hν + $\mathbf{Cr}^{18+}$	Fluorescence		Th	1016
hν + $\mathbf{Mn}^{19+}$	Fluorescence		Th	1016
hν + $\mathbf{Fe}^{20+}$	Fluorescence		Th	1016
hν + $\mathbf{Co}^{21+}$	Fluorescence		Th	1016
hν + $\mathbf{Ni}^{22+}$	Fluorescence		Th	1016
hν + $\mathbf{Cu}^{23+}$	Fluorescence		Th	1016
hν + $\mathbf{Zn}^{24+}$	Fluorescence		Th	1016
hν + **Rb**	Photoionization	134−220 eV	E/T	1017
hν + **Cs**	Photoionization	134−220 eV	E/T	1017
hν + **Ar**	Photoexcitation	491−467 nm	Exp	1018
hν + **Li**	Photoionization	200−650 eV	Exp	1019
hν + $\mathbf{N_2}$	Photoionization	3−4×10^{14} W/cm^2	Th	1020
hν + $\mathbf{O_2}$	Photoionization	3−4×10^{14} W/cm^2	Th	1020
hν + **W**	Photoionization	11−40 keV	Exp	1021
hν + **Au**	Photoionization	11−40 keV	Exp	1021
hν + **Pb**	Photoionization	11−40 keV	Exp	1021
hν + **CO**	Photoionization	300−305 eV	Exp	1022
hν + **Mg**	Photoionization	22−54 eV	Exp	1023
hν + $\mathbf{N_2}^+$	Photodissociation	790 nm	Exp	1024
hν + $\mathbf{N_2}^+$	Photoionization	790 nm	Exp	1024
hν + $\mathbf{CO_2}$	Photoionization	795 nm	Exp	1025
hν + $\mathbf{N_2}$	Photoionization	795 nm	Exp	1025
hν + $\mathbf{C_3H_4}$	Photoionization	795 nm	Exp	1025
hν + $\mathbf{I}^{2+}$	Total Absorption, Scattering	65−130 eV	E/T	1026
hν + $\mathbf{I}^{3+}$	Total Absorption, Scattering	65−130 eV	E/T	1026

hν + I^{4+}	Total Absorption, Scattering	65−130 eV	E/T	1026
hν + He	Photoionization	42−58 eV	Th	1027
hν + Ne_2	Photodissociation	871 eV	Th	1028
hν + Ne_2	Photoionization	871 eV	Th	1028
hν + Ne_2	Photodissociation	880.2 eV	Exp	1029
hν + Ne_2	Photoionization	880.2 eV	Exp	1029
hν + Cr^{16+}	Photoexcitation	10^{-6}-10^{1} (unitless)	Th	1030
hν + Mo^{32+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th	1031
hν + Mo^{33+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th	1031
hν + Mo^{34+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th	1031
hν + Mo^{35+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th	1031
hν + Mo^{36+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th	1031
hν + Mo^{37+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th	1031
hν + Mo^{38+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th	1031
hν + Mo^{39+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th	1031
hν + Mo^{40+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th	1031
hν + He	Photoexcitation	10^{-6}-1 a.u.	Th	1032
hν + Na	Total Absorption, Scattering	528 nm	E/T	1033
hν + Na^{*}	Total Absorption, Scattering	528 nm	E/T	1033
hν + CO_2	Photodissociation	535 eV	E/T	1034
hν + Cu	Total Absorption, Scattering	5−20 keV	E/T	1035
hν + Sc^{2+}	Photoionization	25−60 eV	Th	1036
hν + $H_3{}^{+}$	Photoionization	0.0533 a.u. − 1064 nm	Th	1037
hν + Mg^{-}	Photodetachment	0−10 eV	Th	1038
hν + Ca^{-}	Photodetachment	0−10 eV	Th	1038
hν + He	Photoionization	54.4 eV	Th	1039
hν + $H_2{}^{+}$	Photodissociation	800 nm	E/T	1040
hν + $D_2{}^{+}$	Photodissociation	800 nm	E/T	1040
hν + Ni^{24+}	Photoexcitation	200 $\AA$	Th	1041
hν + Nb^{+}	Photoexcitation	4600−2600 $\AA$	Exp	1042
hν + Ta^{+}	Photoexcitation	40,000 cm^{-1}	E/T	1043
hν + CH_4	Photoexcitation	0−9000 K	Th	1044
hν + Fe^{+}	Photoexcitation	8000−4000 $\AA$	Th	1045
hν + CH	Photoexcitation	1300 $\AA$	Th	1046
hν + Fe	Photoionization	63,000−74,700 cm^{-1}	Exp	1047
hν + Fe^{15+}	Photoexcitation	18.0−14.5 $\AA$	E/T	1048
hν + Fe^{5+}	Photoexcitation	265.0−125.0 $\AA$	Exp	1049
hν + Fe^{6+}	Photoexcitation	265.0−125.0 $\AA$	Exp	1049
hν + Fe^{7+}	Photoexcitation	265.0−125.0 $\AA$	Exp	1049
hν + Fe^{8+}	Photoexcitation	265.0−125.0 $\AA$	Exp	1049
hν + Fe^{9+}	Photoexcitation	265.0−125.0 $\AA$	Exp	1049
hν + Fe^{10+}	Photoexcitation	265.0−125.0 $\AA$	Exp	1049
hν + Fe^{11+}	Photoexcitation	265.0−125.0 $\AA$	Exp	1049
hν + Fe^{12+}	Photoexcitation	265.0−125.0 $\AA$	Exp	1049
hν + Fe^{13+}	Photoexcitation	265.0−125.0 $\AA$	Exp	1049
hν + O^{-}	Photodetachment	600 nm	Exp	1050
hν + OH^{-}	Photodetachment	600 nm	Exp	1050
hν + N_2	Photoionization	290−275 nm	Exp	1051
hν + $Ar_2{}^{+}$	Photodissociation	2.35 eV	Exp	1052
hν + $Ar_3{}^{+}$	Photodissociation	2.35 eV	Exp	1052
hν + CO	Photodissociation	22−33 eV	Exp	1053
hν + CO	Photoionization	22−33 eV	Exp	1053
hν + CO_2	Photodissociation	184.9−116.5 nm	E/T	1054
hν + N_2	Fluorescence	804 nm	Exp	1055
hν + N_2	Photoexcitation	804 nm	Exp	1055
hν + N_2	Photoionization	804 nm	Exp	1055

hν + H_3O	Photoionization	0−50 eV	Th	1056
hν + NH_4	Photoionization	0−50 eV	Th	1056
hν + Cr	Total Absorption, Scattering	22−88 keV	Exp	1057
hν + Fe	Total Absorption, Scattering	22−88 keV	Exp	1057
hν + Ni	Total Absorption, Scattering	22−88 keV	Exp	1057
hν + Cs	Photoionization		Th	1058
hν + Cs^*	Photoionization		Th	1058
hν + H	Photoionization		Exp	1059
hν + Ar	Photoionization		Exp	1059
hν + H	Photoionization		Th	1060
hν + SF_6	Photodissociation	170−231 eV	Exp	1061
hν + SF_6	Photoionization	170−231 eV	Exp	1061
hν + Ar	Photoionization	150−280 eV	Exp	1062
hν + Kr	Photoionization	150−280 eV	Exp	1062
hν + Xe	Photoionization	150−280 eV	Exp	1062
hν + Ar_{70}	Photoionization	150−280 eV	Exp	1062
hν + Ar_{77}	Photoionization	150−280 eV	Exp	1062
hν + Ar_{230}	Photoionization	150−280 eV	Exp	1062
hν + Ar_{250}	Photoionization	150−280 eV	Exp	1062
hν + Kr_{66}	Photoionization	150−280 eV	Exp	1062
hν + Kr_{70}	Photoionization	150−280 eV	Exp	1062
hν + Kr_{230}	Photoionization	150−280 eV	Exp	1062
hν + Kr_{251}	Photoionization	150−280 eV	Exp	1062
hν + Xe_{270}	Photoionization	150−280 eV	Exp	1062
hν + CF_4	Photoionization	20−120 eV	Th	1063
hν + H^-	Photoionization	20−400 eV	Th	1064
hν + He	Photoionization	20−400 eV	Th	1064
hν + Li	Photoionization	20−400 eV	Th	1064
hν + Be	Photoionization	20−400 eV	Th	1064
hν + Be^{2+}	Photoionization	20−400 eV	Th	1064
hν + H^-	Photodetachment	0.75−1.5 eV	Th	1065
hν + Ca	Photoexcitation	6100 $\AA$	Exp	1066
hν + Cu^+	Photoexcitation	1358 $\AA$	Exp	1067
hν + H_2O	Photodissociation	244 nm	Exp	1068
hν + N_2	Photoionization	510 eV	Exp	1069
hν + H	Photoionization	238−244 nm	Th	1070
hν + NH_3	Photodissociation	100 eV; 15−60 eV	E/T	1071
hν + NH_3	Photoexcitation	100 eV; 15−60 eV	E/T	1071
hν + Ar	Photoionization	30−90 eV	Th	1072
hν + Te	Photoionization	5.888−5.899 keV	Exp	1073
hν + I	Photoionization	5.888−5.899 keV	Exp	1073
hν + Cs	Photoionization	5.888−5.899 keV	Exp	1073
hν + Ba	Photoionization	5.888−5.899 keV	Exp	1073
hν + La	Photoionization	5.888−5.899 keV	Exp	1073
hν + MgC_{60}	Photoionization	6−50 eV	Th	1074
hν + CS_2	Photodissociation	800 nm	Exp	1075
hν + CS_2	Photoionization	800 nm	Exp	1075
hν + H	Photoionization	0.03−0.1 a.u.	Th	1076
hν + Ar	Photoionization	0.03−0.1 a.u.	Th	1076
hν + H_2	Photoionization	10^{14}-10^{15} W/cm^2	Th	1077
hν + Be	Photoionization	9−14 eV	Th	1078
hν + Xe	Photoionization	108 μ m	Exp	1079
hν + H_2	Photoionization	160 eV	Exp	1080
hν + ArC_{60}	Photoionization	3220−3290 eV	Th	1081
hν + ArC_{240}	Photoionization	3220−3290 eV	Th	1081
hν + ArC_{540}	Photoionization	3220−3290 eV	Th	1081
hν + Ne	Photoionization	10^{14}-3×10^{15} W/cm^2	Exp	1082

hν + Ar	Photoionization	10^{14}-3 $\times$ 10^{15} W/cm^2	Exp	1082
e + Yb*	Photoionization	3.8−2,000 eV	E/T	726
e + $H_2{}^+$	Photoionization	10 eV	Th	810
nhν + He	Photoionization	24−50 eV	Th	715
nhν + He	Photoionization	390−780 nm	Th	721
nhν + H_2	Photodissociation	2.7−13.6 eV	Th	773
nhν + H_2	Elastic Scattering	2.7−13.6 eV	Th	773
nhν + H_2	Photoionization	2.7−13.6 eV	Th	773
nhν + Ne	Photoionization	60−240 eV	Exp	819
nhν + $H_2{}^+$	Photodissociation	1−3$\times$$10^{14}$ W/cm^2	Th	849
nhν + $H_2{}^+$	Photoionization	1−3$\times$$10^{14}$ W/cm^2	Th	849
nhν + H	Photoionization	1.36 eV	Th	870
nhν + He	Photoionization	79.5 nm	Th	871
nhν + N_2	Photodissociation	820 nm	Exp	872
nhν + N_2	Photoionization	820 nm	Exp	872
nhν + $H_2{}^+$	Photodissociation	785 nm	Th	873
nhν + K_2	Photoexcitation	845 nm	Th	874
nhν + Be	Photoionization	57.49 eV	Th	875
nhν + Sr	Photoionization	710−740 nm	Exp	896
nhν + CH_4	Photodissociation	800 nm	Exp	1000
nhν + CH_4	Fluorescence	800 nm	Exp	1000
nhν + CH_4	Photoexcitation	800 nm	Exp	1000
nhν + CO_2	Photoionization	795 nm	Exp	1025
nhν + N_2	Photoionization	795 nm	Exp	1025
nhν + C_3H_4	Photoionization	795 nm	Exp	1025
nhν + H	Photoionization	238−244 nm	Th	1070
nhν + Ar	Photoionization	30−90 eV	Th	1072
2hν + Ne	Photoionization	30−200 eV	Th	763
2hν + Ar	Photoionization	30−200 eV	Th	763
2hν + H	Photoionization	13.6−40 eV	Th	851
2hν + He	Photoionization	44−58 eV	Th	865
2hν + Ne	Photoionization	28−110 eV	Th	986
2hν + Ar	Photoionization	28−110 eV	Th	986
2hν + I	Photoexcitation	9.48−9.86 eV	Exp	998
2hν + I	Photoionization	9.48−9.86 eV	Exp	998
2hν + He	Photoionization	42−58 eV	Th	1027

2.2.2 Electron Collisions

e + $CO_2{}^{2+}$	Dissociation	1300 eV	Exp	1083
e + CO^+	Dissociation	15−2500 eV	E/T	1084
e + CO^+	Ionization	15−2500 eV	E/T	1084
e + $C_6H_5N_3$	Dissociation	3−12 eV	E/T	1085
e + $C_6H_5N_3$	Electron Collisions	3−12 eV	E/T	1085
e + Li	Angular Scattering	2 keV	Th	1086
e + Li	Ionization	2 keV	Th	1086
e + NO	Elastic Scattering	10−2000 eV	Th	1087
e + N_2O	Elastic Scattering	10−2000 eV	Th	1087
e + NO_2	Elastic Scattering	10−2000 eV	Th	1087
e + NO_3	Elastic Scattering	10−2000 eV	Th	1087
e + N_2O_5	Elastic Scattering	10−2000 eV	Th	1087
e + NO	Excitation	10−2000 eV	Th	1087
e + N_2O	Excitation	10−2000 eV	Th	1087
e + NO_2	Excitation	10−2000 eV	Th	1087
e + NO_3	Excitation	10−2000 eV	Th	1087
e + N_2O_5	Excitation	10−2000 eV	Th	1087

e + NO	Ionization	10−2000 eV	Th	1087
e + $\mathbf{N_2O}$	Ionization	10−2000 eV	Th	1087
e + $\mathbf{NO_2}$	Ionization	10−2000 eV	Th	1087
e + $\mathbf{NO_3}$	Ionization	10−2000 eV	Th	1087
e + $\mathbf{N_2O_5}$	Ionization	10−2000 eV	Th	1087
e + $\mathbf{W^{44+}}$	Excitation	75−800 eV	Th	1088
e + $\mathbf{W^{45+}}$	Excitation	75−800 eV	Th	1088
e + $\mathbf{O^{4+}}$	Excitation	200−1500 eV	Th	1089
e + $\mathbf{Ne^{6+}}$	Excitation	200−1500 eV	Th	1089
e + $\mathbf{Si^{10+}}$	Excitation	200−1500 eV	Th	1089
e + $\mathbf{Ar^{14+}}$	Excitation	200−1500 eV	Th	1089
e + $\mathbf{Fe^{22+}}$	Excitation	200−1500 eV	Th	1089
e + $\mathbf{Mo^{38+}}$	Excitation	200−1500 eV	Th	1089
e + Ar	Ionization	0−52 eV	Th	1090
e + CO	Excitation	256−276 eV	Exp	1091
e + CO	Ionization	256−276 eV	Exp	1091
e + $\mathbf{Sn^{4+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{5+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{6+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{7+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{8+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{9+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{10+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{11+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{12+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{13+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Xe^{8+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Xe^{9+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Xe^{10+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Xe^{11+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Xe^{12+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Xe^{13+}}$	Recombination	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{4+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{5+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{6+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{7+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{8+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{9+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{10+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{11+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{12+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{13+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Xe^{8+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Xe^{9+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Xe^{10+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Xe^{11+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Xe^{12+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Xe^{13+}}$	Fluorescence	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{4+}}$	Excitation	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{5+}}$	Excitation	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{6+}}$	Excitation	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{7+}}$	Excitation	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{8+}}$	Excitation	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{9+}}$	Excitation	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{10+}}$	Excitation	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{11+}}$	Excitation	15−40 T(eV)	Th	1092
e + $\mathbf{Sn^{12+}}$	Excitation	15−40 T(eV)	Th	1092

e + Sn^{13+}	Excitation	15−40 T(eV)	Th	1092
e + Xe^{8+}	Excitation	15−40 T(eV)	Th	1092
e + Xe^{9+}	Excitation	15−40 T(eV)	Th	1092
e + Xe^{10+}	Excitation	15−40 T(eV)	Th	1092
e + Xe^{11+}	Excitation	15−40 T(eV)	Th	1092
e + Xe^{12+}	Excitation	15−40 T(eV)	Th	1092
e + Xe^{13+}	Excitation	15−40 T(eV)	Th	1092
e + Ar	Angular Scattering	15−30 eV	Th	1093
e + Kr	Angular Scattering	15−30 eV	Th	1093
e + Ar	Excitation	15−30 eV	Th	1093
e + Kr	Excitation	15−30 eV	Th	1093
e + CH_3Br	Attachment	1−180 MeV	Exp	1094
e + CH_3Br^*	Attachment	1−180 MeV	Exp	1094
e + CH_3Br	Dissociation	1−180 MeV	Exp	1094
e + CH_3Br^*	Dissociation	1−180 MeV	Exp	1094
e + CH_3Br	Elastic Scattering	1−180 MeV	Exp	1094
e + CH_3Br^*	Elastic Scattering	1−180 MeV	Exp	1094
e + CH_3Br	Excitation	1−180 MeV	Exp	1094
e + CH_3Br^*	Excitation	1−180 MeV	Exp	1094
e + H_2O	Dissociation	20−50 eV	Exp	1095
e + H_2O	Angular Scattering	20−50 eV	Exp	1095
e + H_2O	Excitation	20−50 eV	Exp	1095
e + Pb	Fluorescence	16−40 keV	Exp	1096
e + Pb	Ionization	16−40 keV	Exp	1096
e + He	Angular Scattering	150−488 eV	E/T	1097
e + He	Ionization	150−488 eV	E/T	1097
e + Si^{3+}	Recombination	0−20 eV	E/T	1098
e + B	Excitation	0.05−1.5 Ry	Th	1099
e + HCN	Excitation	6−10 eV	Th	1100
e + HNC	Excitation	6−10 eV	Th	1100
e + CH_3OH	Elastic Scattering	0−12 eV	Th	1101
e + CH_3OH	Excitation	0−12 eV	Th	1101
e + H^-	Angular Scattering	1−160 eV	Th	1102
e + H	Angular Scattering	1−160 eV	Th	1102
e + H^*	Angular Scattering	1−160 eV	Th	1102
e + He	Angular Scattering	1−160 eV	Th	1102
e + ${H_2}^+$	Angular Scattering	1−160 eV	Th	1102
e + H^-	Ionization	1−160 eV	Th	1102
e + H	Ionization	1−160 eV	Th	1102
e + H^*	Ionization	1−160 eV	Th	1102
e + He	Ionization	1−160 eV	Th	1102
e + ${H_2}^+$	Ionization	1−160 eV	Th	1102
e + Zn	Excitation	7−20 eV	Exp	1103
e + Zn	Ionization	7−20 eV	Exp	1103
e + Li^+	Ionization	15−100 eV	Th	1104
e + Li^{+*}	Ionization	15−100 eV	Th	1104
e + Al	Bremsstrahlung	15 MeV	Th	1105
e + H_2O	Attachment	4−10 eV	Th	1106
e + H_2O	Dissociation	4−10 eV	Th	1106
e + Si	Ionization	5−5000 eV	Th	1107
e + Ge	Ionization	5−5000 eV	Th	1107
e + Sn	Ionization	5−5000 eV	Th	1107
e + Pb	Ionization	5−5000 eV	Th	1107
e + H	De-excitation	0−10 a.u.	Th	1108
e + H^*	De-excitation	0−10 a.u.	Th	1108
e + H	Elastic Scattering	0−10 a.u.	Th	1108
e + Ar	Angular Scattering	2−20 eV	E/T	1109

e + Ar*	Angular Scattering	2−20 eV	E/T	1109
e + Ar	Ionization	2−20 eV	E/T	1109
e + Ar*	Ionization	2−20 eV	E/T	1109
e + $\mathbf{N_2}$	Angular Scattering	17.5−50 eV	Exp	1110
e + $\mathbf{N_2}$	Excitation	17.5−50 eV	Exp	1110
e + $\mathbf{PH_3}$	Elastic Scattering	0.025−15 eV	Th	1111
e + Mg	Elastic Scattering	10−100 eV	Exp	1112
e + Mg	Angular Scattering	10−100 eV	Exp	1112
e + $\mathbf{W^{46+}}$	Fluorescence	1−5 keV	E/T	1113
e + Yb	Ionization	3.8−2,000 eV	E/T	1114
e + Yb*	Ionization	3.8−2,000 eV	E/T	1114
e + $\mathbf{CO^{+}}$	Dissociation	0−20 eV	E/T	1115
e + $\mathbf{CO^{+}}$	Recombination	0−20 eV	E/T	1115
e + $\mathbf{CO^{+}}$	Excitation	0−20 eV	E/T	1115
e + $\mathbf{W^{29+}}$	Fluorescence	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{30+}}$	Fluorescence	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{31+}}$	Fluorescence	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{32+}}$	Fluorescence	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{33+}}$	Fluorescence	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{34+}}$	Fluorescence	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{35+}}$	Fluorescence	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{36+}}$	Fluorescence	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{37+}}$	Fluorescence	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{29+}}$	Excitation	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{30+}}$	Excitation	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{31+}}$	Excitation	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{32+}}$	Excitation	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{33+}}$	Excitation	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{34+}}$	Excitation	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{35+}}$	Excitation	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{36+}}$	Excitation	4.6−6.5 threshold	E/T	1116
e + $\mathbf{W^{37+}}$	Excitation	4.6−6.5 threshold	E/T	1116
e + $\mathbf{CD^{+}}$	Dissociation	5−2500 eV	E/T	1117
e + $\mathbf{CD^{+}}$	Ionization	5−2500 eV	E/T	1117
e + He	Angular Scattering	102 eV	Th	1118
e + He	Ionization	102 eV	Th	1118
e + $\mathbf{CH_4}$	Angular Scattering	80 eV	Exp	1119
e + $\mathbf{CH_4}$	Excitation	80 eV	Exp	1119
e + $\mathbf{H_2O}$	Angular Scattering	28−108 eV	E/T	1120
e + $\mathbf{H_2O^*}$	Angular Scattering	28−108 eV	E/T	1120
e + $\mathbf{H_2O}$	Ionization	28−108 eV	E/T	1120
e + $\mathbf{H_2O^*}$	Ionization	28−108 eV	E/T	1120
e + Ar	Angular Scattering	953−973 eV	Exp	1121
e + Ar	Ionization	953−973 eV	Exp	1121
e + $\mathbf{Ne^{+}}$	Excitation	10^3-10^9 K	Th	1122
e + $\mathbf{Na^{2+}}$	Excitation	10^3-10^9 K	Th	1122
e + $\mathbf{Mg^{3+}}$	Excitation	10^3-10^9 K	Th	1122
e + $\mathbf{Al^{4+}}$	Excitation	10^3-10^9 K	Th	1122
e + $\mathbf{Si^{5+}}$	Excitation	10^3-10^9 K	Th	1122
e + $\mathbf{P^{6+}}$	Excitation	10^3-10^9 K	Th	1122
e + $\mathbf{S^{7+}}$	Excitation	10^3-10^9 K	Th	1122
e + $\mathbf{Cl^{8+}}$	Excitation	10^3-10^9 K	Th	1122
e + $\mathbf{Ar^{9+}}$	Excitation	10^3-10^9 K	Th	1122
e + $\mathbf{K^{10+}}$	Excitation	10^3-10^9 K	Th	1122
e + $\mathbf{Ca^{11+}}$	Excitation	10^3-10^9 K	Th	1122
e + $\mathbf{Sc^{12+}}$	Excitation	10^3-10^9 K	Th	1122
e + $\mathbf{Ti^{13+}}$	Excitation	10^3-10^9 K	Th	1122

e + V^{14+}	Excitation	10^3-10^9 K	Th	1122
e + Cr^{15+}	Excitation	10^3-10^9 K	Th	1122
e + Mn^{16+}	Excitation	10^3-10^9 K	Th	1122
e + Fe^{17+}	Excitation	10^3-10^9 K	Th	1122
e + Co^{18+}	Excitation	10^3-10^9 K	Th	1122
e + Ni^{19+}	Excitation	10^3-10^9 K	Th	1122
e + Cu^{20+}	Excitation	10^3-10^9 K	Th	1122
e + Zn^{21+}	Excitation	10^3-10^9 K	Th	1122
e + Ga^{22+}	Excitation	10^3-10^9 K	Th	1122
e + Ge^{23+}	Excitation	10^3-10^9 K	Th	1122
e + As^{24+}	Excitation	10^3-10^9 K	Th	1122
e + Se^{25+}	Excitation	10^3-10^9 K	Th	1122
e + Br^{26+}	Excitation	10^3-10^9 K	Th	1122
e + Kr^{27+}	Excitation	10^3-10^9 K	Th	1122
e + C_4H_{10}	Elastic Scattering	1−200 eV	Th	1123
e + C_4H_{10}	Angular Scattering	1−200 eV	Th	1123
e + C_4H_{10}	Total Scattering	1−200 eV	Th	1123
e + C_4H_{10}	Ionization	1−200 eV	Th	1123
e + O	Angular Scattering	15−100 eV	Th	1124
e + O	Excitation	15−100 eV	Th	1124
e + W^{46+}	Excitation	400−5000 T(eV)	Th	1125
e + Ca	Elastic Scattering	10−500 eV	Th	1126
e + Ca	Angular Scattering	10−500 eV	Th	1126
e + Ca	Total Scattering	10−500 eV	Th	1126
e + Ca	Excitation	10−500 eV	Th	1126
e + Ca	Ionization	10−500 eV	Th	1126
e + Mg	Angular Scattering	200−1500 eV	Th	1127
e + Mg	Ionization	200−1500 eV	Th	1127
e + He	Elastic Scattering	14−2000 eV	Th	1128
e + Ne	Elastic Scattering	14−2000 eV	Th	1128
e + Ar	Elastic Scattering	14−2000 eV	Th	1128
e + Kr	Elastic Scattering	14−2000 eV	Th	1128
e + Xe	Elastic Scattering	14−2000 eV	Th	1128
e + He	Excitation	14−2000 eV	Th	1128
e + Ne	Excitation	14−2000 eV	Th	1128
e + Ar	Excitation	14−2000 eV	Th	1128
e + Kr	Excitation	14−2000 eV	Th	1128
e + Xe	Excitation	14−2000 eV	Th	1128
e + He	Ionization	14−2000 eV	Th	1128
e + Ne	Ionization	14−2000 eV	Th	1128
e + Ar	Ionization	14−2000 eV	Th	1128
e + Kr	Ionization	14−2000 eV	Th	1128
e + Xe	Ionization	14−2000 eV	Th	1128
e + H	Ionization	0−2000 eV	E/T	1129
e + He	Ionization	0−2000 eV	E/T	1129
e + Li	Ionization	0−2000 eV	E/T	1129
e + Be	Ionization	0−2000 eV	E/T	1129
e + B	Ionization	0−2000 eV	E/T	1129
e + C	Ionization	0−2000 eV	E/T	1129
e + N	Ionization	0−2000 eV	E/T	1129
e + O	Ionization	0−2000 eV	E/T	1129
e + F	Ionization	0−2000 eV	E/T	1129
e + Ne	Ionization	0−2000 eV	E/T	1129
e + Na	Ionization	0−2000 eV	E/T	1129
e + Mg	Ionization	0−2000 eV	E/T	1129
e + Al	Ionization	0−2000 eV	E/T	1129
e + Si	Ionization	0−2000 eV	E/T	1129

e + P	Ionization	0−2000 eV	E/T	1129
e + S	Ionization	0−2000 eV	E/T	1129
e + Cl	Ionization	0−2000 eV	E/T	1129
e + Ar	Ionization	0−2000 eV	E/T	1129
e + K	Ionization	0−2000 eV	E/T	1129
e + Ca	Ionization	0−2000 eV	E/T	1129
e + Sc	Ionization	0−2000 eV	E/T	1129
e + Ti	Ionization	0−2000 eV	E/T	1129
e + V	Ionization	0−2000 eV	E/T	1129
e + Cr	Ionization	0−2000 eV	E/T	1129
e + Mn	Ionization	0−2000 eV	E/T	1129
e + Fe	Ionization	0−2000 eV	E/T	1129
e + Co	Ionization	0−2000 eV	E/T	1129
e + Ni	Ionization	0−2000 eV	E/T	1129
e + Cu	Ionization	0−2000 eV	E/T	1129
e + Zn	Ionization	0−2000 eV	E/T	1129
e + Ga	Ionization	0−2000 eV	E/T	1129
e + Ge	Ionization	0−2000 eV	E/T	1129
e + C_2H_4	Elastic Scattering	2−30 eV	Exp	1130
e + C_2H_4	Angular Scattering	2−30 eV	Exp	1130
e + N_2	Angular Scattering	600 eV	Exp	1131
e + N_2	Ionization	600 eV	Exp	1131
e + Fe	Ionization		Th	1132
e + Ni	Ionization		Th	1132
e + Au	Ionization		Th	1132
e + Ca	Excitation	2−40 eV	Th	1133
e + P	Attachment	745 MeV	Exp	1134
e + Cs	Elastic Scattering	4−25 eV	Th	1135
e + Ca	De-excitation	0−100 K	Th	1136
e + Ca^*	De-excitation	0−100 K	Th	1136
e + Xe	De-excitation	0−100 K	Th	1136
e + Xe^*	De-excitation	0−100 K	Th	1136
e + Au^{52+}	Recombination	100−3000 eV	Th	1137
e + N_2O	Angular Scattering	415−900 eV	Th	1138
e + N_2O	Excitation	415−900 eV	Th	1138
e + Fe^{4+}	Excitation	0−3.2 Ry	E/T	1139
e + Ar^+	Excitation	0−70 eV	E/T	1140
e + H_2O	Attachment	0−20 eV	Exp	1141
e + D_2O	Attachment	0−20 eV	Exp	1141
e + H_2O	Dissociation	0−20 eV	Exp	1141
e + D_2O	Dissociation	0−20 eV	Exp	1141
e + I^{47+}	Recombination	19.5−22.5 keV	Exp	1142
e + I^{48+}	Recombination	19.5−22.5 keV	Exp	1142
e + I^{49+}	Recombination	19.5−22.5 keV	Exp	1142
e + I^{50+}	Recombination	19.5−22.5 keV	Exp	1142
e + I^{51+}	Recombination	19.5−22.5 keV	Exp	1142
e + Cl^{15+}	Excitation	2.5−5 keV	Th	1143
e + H_2O	Attachment		Th	1144
e + H_2O	Dissociation		Th	1144
e + H_2O	Attachment	5−14 eV	Th	1145
e + H_2O	Dissociation	5−14 eV	Th	1145
e + He	Angular Scattering	5.6 keV	Th	1146
e + He	Ionization	5.6 keV	Th	1146
e + N_2	Angular Scattering	8−20 eV	Th	1147
e + N_2	Excitation	8−20 eV	Th	1147
e + Zn	Fluorescence	16−20 eV	Exp	1148
e + Zn	Excitation	16−20 eV	Exp	1148

e + Zn	Ionization	16−20 eV	Exp	1148
e + He	Elastic Scattering	2−25 eV	Th	1149
e + He	Angular Scattering	2−25 eV	Th	1149
e + He^{+}	Angular Scattering	2−25 eV	Th	1149
e + He^{+}	Recombination	2−25 eV	Th	1149
e + He	Electron Collisions	2−25 eV	Th	1149
e + Mg	Angular Scattering	13.65−67.5 eV	Th	1150
e + Mg	Ionization	13.65−67.5 eV	Th	1150
e + Fe^{13+}	Excitation	1.67−6.62 eV	Exp	1151
e + Li	Excitation		Exp	1152
e + HI	Elastic Scattering	1−500 MeV	Th	1153
e + DI	Elastic Scattering	1−500 MeV	Th	1153
e + Zn	Attachment	10−12.5 eV	Exp	1154
e + Zn	Excitation	10−12.5 eV	Exp	1154
e + Xe^{6+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{7+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{8+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{9+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{10+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{11+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{12+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{13+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{14+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{15+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{16+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{17+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{18+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{19+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{20+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{21+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{22+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{23+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{24+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{25+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{26+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{27+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{28+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{29+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{30+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{31+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{32+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{33+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{34+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{35+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{36+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{37+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{38+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{39+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{40+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{41+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{42+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{43+}	Fluorescence	180−8000 eV	E/T	1155
e + Xe^{6+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{7+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{8+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{9+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{10+}	Excitation	180−8000 eV	E/T	1155

e + Xe^{11+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{12+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{13+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{14+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{15+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{16+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{17+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{18+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{19+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{20+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{21+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{22+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{23+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{24+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{25+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{26+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{27+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{28+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{29+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{30+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{31+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{32+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{33+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{34+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{35+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{36+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{37+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{38+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{39+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{40+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{41+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{42+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{43+}	Excitation	180−8000 eV	E/T	1155
e + Xe^{6+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{7+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{8+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{9+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{10+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{11+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{12+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{13+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{14+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{15+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{16+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{17+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{18+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{19+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{20+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{21+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{22+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{23+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{24+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{25+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{26+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{27+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{28+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{29+}	Ionization	180−8000 eV	E/T	1155

e + Xe^{30+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{31+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{32+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{33+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{34+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{35+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{36+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{37+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{38+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{39+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{40+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{41+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{42+}	Ionization	180−8000 eV	E/T	1155
e + Xe^{43+}	Ionization	180−8000 eV	E/T	1155
e + Ne	Excitation	100−500 eV	Exp	1156
e + Ar	Excitation	100−500 eV	Exp	1156
e + Kr	Excitation	100−500 eV	Exp	1156
e + Xe	Excitation	100−500 eV	Exp	1156
e + H	Elastic Scattering	0−1 a.u.	Th	1157
e + CH_3I	Dissociation	0−600 meV	Th	1158
e + CH_3Cl	Dissociation	0−600 meV	Th	1158
e + CH_3Br	Dissociation	0−600 meV	Th	1158
e + CH_3I	Elastic Scattering	0−600 meV	Th	1158
e + CH_3Cl	Elastic Scattering	0−600 meV	Th	1158
e + CH_3Br	Elastic Scattering	0−600 meV	Th	1158
e + CH_3I	Angular Scattering	0−600 meV	Th	1158
e + CH_3Cl	Angular Scattering	0−600 meV	Th	1158
e + CH_3Br	Angular Scattering	0−600 meV	Th	1158
e + CH_3I	Excitation	0−600 meV	Th	1158
e + CH_3Cl	Excitation	0−600 meV	Th	1158
e + CH_3Br	Excitation	0−600 meV	Th	1158
e + Cs	Elastic Scattering	6−200 eV	Exp	1159
e + Cs	Excitation	6−200 eV	Exp	1159
e + Cs	Ionization	6−200 eV	Exp	1159
e + He	Angular Scattering	730 eV	Th	1160
e + He	Ionization	730 eV	Th	1160
e + He	Angular Scattering	112−309 eV	E/T	1161
e + He	Excitation	112−309 eV	E/T	1161
e + He	Ionization	112−309 eV	E/T	1161
e + He	Excitation	1240−4260 eV	E/T	1162
e + He^{+}	Excitation	1240−4260 eV	E/T	1162
e + He	Ionization	1240−4260 eV	E/T	1162
e + He^{+}	Ionization	1240−4260 eV	E/T	1162
e + S^{4+}	Excitation	14.5−17 eV	Exp	1163
e + $He_2{}^{+}$	Dissociation	1−15 eV	E/T	1164
e + $He_2{}^{+}$	Excitation	1−15 eV	E/T	1164
e + Ar	Excitation	2−10 eV	Exp	1165
e + Ar^{*}	Excitation	2−10 eV	Exp	1165
e + Kr	Angular Scattering	240−500 eV	Exp	1166
e + Kr	Ionization	240−500 eV	Exp	1166
e + Pb	Angular Scattering	10−100 eV	E/T	1167
e + Pb	Excitation	10−100 eV	E/T	1167
e + $CH_2{}^{+}$	Dissociation	3−100 eV	E/T	1168
e + $CH_2{}^{+}$	Ionization	3−100 eV	E/T	1168
e + $HCNH^{+}$	Elastic Scattering	0.05−0.15 hartree	Th	1169
e + $C_6H_5CH_3$	Elastic Scattering	0.4−1000 eV	E/T	1170
e + $C_6H_5CH_3$	Angular Scattering	0.4−1000 eV	E/T	1170

e + $C_6H_5CH_3$	Excitation	0.4−1000 eV	E/T	1170
e + Cu^{27+}	Elastic Scattering	0−800 Ry	Th	1171
e + Cu^{27+}	Excitation	0−800 Ry	Th	1171
e + Ar^{5+}	Ionization	50−350 eV	Exp	1172
e + CF_4	Elastic Scattering	0−0.5 eV	Th	1173
e + Cs	Elastic Scattering	5.5−13.5 eV	E/T	1174
e + Cs^*	Elastic Scattering	5.5−13.5 eV	E/T	1174
e + Cs	Angular Scattering	5.5−13.5 eV	E/T	1174
e + Cs^*	Angular Scattering	5.5−13.5 eV	E/T	1174
e + H	Elastic Scattering	0−13.6 eV	Th	1175
e + Ar	Elastic Scattering	0−13.6 eV	Th	1175
e + Kr	Elastic Scattering	0−13.6 eV	Th	1175
e + Xe	Elastic Scattering	0−13.6 eV	Th	1175
e + SiN_2	Elastic Scattering	1−100 eV	Th	1176
e + SiCO	Elastic Scattering	1−100 eV	Th	1176
e + CSiO	Elastic Scattering	1−100 eV	Th	1176
e + SiN_2	Angular Scattering	1−100 eV	Th	1176
e + SiCO	Angular Scattering	1−100 eV	Th	1176
e + CSiO	Angular Scattering	1−100 eV	Th	1176
e + SiN_2	Total Scattering	1−100 eV	Th	1176
e + SiCO	Total Scattering	1−100 eV	Th	1176
e + CSiO	Total Scattering	1−100 eV	Th	1176
e + $C_4H_4N_2$	Elastic Scattering	0−10 eV	Th	1177
e + $C_4H_4N_2$	Angular Scattering	0−10 eV	Th	1177
e + H_2	Ionization	15−100 eV	Th	1178
e + N_2	Ionization	15−100 eV	Th	1178
e + CH_3Cl	Attachment	0−16 eV	Th	1179
e + CF_3Cl	Attachment	0−16 eV	Th	1179
e + CH_3Cl	Dissociation	0−16 eV	Th	1179
e + CF_3Cl	Dissociation	0−16 eV	Th	1179
e + Ar^+	Recombination	100−2000 eV	Th	1180
e + Ar^{2+}	Recombination	100−2000 eV	Th	1180
e + Ar^{3+}	Recombination	100−2000 eV	Th	1180
e + Ar^{4+}	Recombination	100−2000 eV	Th	1180
e + Ar^{5+}	Recombination	100−2000 eV	Th	1180
e + Ar^{6+}	Recombination	100−2000 eV	Th	1180
e + Ar^{7+}	Recombination	100−2000 eV	Th	1180
e + Ar^+	Ionization	100−2000 eV	Th	1180
e + Ar^{2+}	Ionization	100−2000 eV	Th	1180
e + Ar^{3+}	Ionization	100−2000 eV	Th	1180
e + Ar^{4+}	Ionization	100−2000 eV	Th	1180
e + Ar^{5+}	Ionization	100−2000 eV	Th	1180
e + Ar^{6+}	Ionization	100−2000 eV	Th	1180
e + Ar^{7+}	Ionization	100−2000 eV	Th	1180
e + Cl_2	Fluorescence	10−750 eV	Exp	1181
e + Cl_2	Ionization	10−750 eV	Exp	1181
e + $CH_2{}^+$	Dissociation	3.7 MeV	Exp	1182
e + $CH_2{}^+$	Recombination	3.7 MeV	Exp	1182
e + Pb	Angular Scattering	10−100 eV	Exp	1183
e + Pb	Excitation	10−100 eV	Exp	1183
e + Ar	Excitation	1−50 eV	Th	1184
e + Ar^*	Excitation	1−50 eV	Th	1184
e + I	Attachment	0−8 eV	Th	1185
e + I	Elastic Scattering	0−8 eV	Th	1185
e + He	Angular Scattering	112.6−268.6 eV	Th	1186
e + He	Excitation	112.6−268.6 eV	Th	1186
e + He	Ionization	112.6−268.6 eV	Th	1186

e + He	Ionization	75−450 eV	Th	1187
e + Ba^+	Recombination	0−250 G	Exp	1188
e + SF_6	Dissociation	50−7500 K	Exp	1189
e + SF_5	Dissociation	50−7500 K	Exp	1189
e + SF_6	Recombination	50−7500 K	Exp	1189
e + SF_5	Recombination	50−7500 K	Exp	1189
e + C_4F_8	Excitation	100 eV	Exp	1190
e + $C\text{-}C_4F_8$	Excitation	100 eV	Exp	1190
e + PO^-	Detachment	0−50 eV	Exp	1191
e + PO_2	Detachment	0−50 eV	Exp	1191
e + PO_3	Detachment	0−50 eV	Exp	1191
e + PO^-	Fluorescence	0−50 eV	Exp	1191
e + PO_2	Fluorescence	0−50 eV	Exp	1191
e + PO_3	Fluorescence	0−50 eV	Exp	1191
e + Xe	Elastic Scattering	5−10 eV	Exp	1192
e + Xe	Angular Scattering	5−10 eV	Exp	1192
e + Xe	Total Scattering	5−10 eV	Exp	1192
e + H_2O	Elastic Scattering	0−1.2 Ry	Th	1193
e + Si^{3+}	Recombination	0−186 eV	E/T	1194
e + Fe^{24+}	Excitation	0−50,000 eV	Th	1195
e + $P(CH_3)_3$	Dissociation	0.4−400 eV	Exp	1196
e + $P(CH_3)_3$	Elastic Scattering	0.4−400 eV	Exp	1196
e + $P(CH_3)_3$	Excitation	0.4−400 eV	Exp	1196
e + $P(CH_3)_3$	Ionization	0.4−400 eV	Exp	1196
e + $H_2{}^+$	Dissociation	0−2.2 eV	Th	1197
e + HD^+	Dissociation	0−2.2 eV	Th	1197
e + $H_2{}^+$	Recombination	0−2.2 eV	Th	1197
e + HD^+	Recombination	0−2.2 eV	Th	1197
e + $H_3{}^+$	Attachment	0−15 eV	Th	1198
e + $H_3{}^+$	Dissociation	0−15 eV	Th	1198
e + $H_3{}^+$	Recombination	0−15 eV	Th	1198
e + B	Excitation	0−70 eV	Th	1199
e + B	Ionization	0−70 eV	Th	1199
e + SiF	Dissociation	1−1000 eV	Th	1200
e + SiF_2	Dissociation	1−1000 eV	Th	1200
e + SiF	Elastic Scattering	1−1000 eV	Th	1200
e + SiF_2	Elastic Scattering	1−1000 eV	Th	1200
e + SiF	Angular Scattering	1−1000 eV	Th	1200
e + SiF_2	Angular Scattering	1−1000 eV	Th	1200
e + SiF	Total Scattering	1−1000 eV	Th	1200
e + SiF_2	Total Scattering	1−1000 eV	Th	1200
e + SiF	Excitation	1−1000 eV	Th	1200
e + SiF_2	Excitation	1−1000 eV	Th	1200
e + SiF	Ionization	1−1000 eV	Th	1200
e + SiF_2	Ionization	1−1000 eV	Th	1200
e + Ar	Angular Scattering	100−2500 eV	Th	1201
e + Ar	Excitation	100−2500 eV	Th	1201
e + Ar	Ionization	100−2500 eV	Th	1201
e + H_2O	Attachment	5−14 eV	Th	1202
e + H_2O	Dissociation	5−14 eV	Th	1202
e + H_2O	Elastic Scattering	1−10,000 eV	E/T	1203
e + H_2O	Angular Scattering	1−10,000 eV	E/T	1203
e + H_2O	Excitation	1−10,000 eV	E/T	1203
e + Fe^{16+}	Excitation	60−85 Ry	Th	1204
e + $O_3{}^+$	Dissociation	0−0.2 eV	Exp	1205
e + $O_3{}^+$	Recombination	0−0.2 eV	Exp	1205
e + $Si_2{}^-$	Dissociation	0−210 eV	Exp	1206

e + $Si_2{}^-$	Detachment	0−210 eV	Exp	1206
e + U^{91+}	Recombination	2×10^{-3}-100 eV	E/T	1207
e + U^{92+}	Recombination	2×10^{-3}-100 eV	E/T	1207
e + Ar	Angular Scattering	113.5 eV	Exp	1208
e + Ar	Ionization	113.5 eV	Exp	1208
e + Mg^{2+}	Recombination	45−65 eV	Th	1209
e + He	Angular Scattering	1 keV	E/T	1210
e + He	Ionization	1 keV	E/T	1210
e + NeF	Elastic Scattering	0−15 eV	Th	1211
e + NeF	Angular Scattering	0−15 eV	Th	1211
e + NeF	Excitation	0−15 eV	Th	1211
e + $He_2{}^+$	Dissociation	3×10^{-3}-40 eV	Exp	1212
e + $He_2{}^+$	Recombination	3×10^{-3}-40 eV	Exp	1212
e + $He_2{}^+$	Excitation	3×10^{-3}-40 eV	Exp	1212
e + Xe	Angular Scattering	112 eV	E/T	1213
e + Xe	Ionization	112 eV	E/T	1213
e + He	Angular Scattering	2080 eV	Th	1214
e + He	Ionization	2080 eV	Th	1214
e + $H_3{}^+$	Dissociation	0−50 eV	Exp	1215
e + D_2H^+	Dissociation	0−50 eV	Exp	1215
e + $H_3{}^+$	Recombination	0−50 eV	Exp	1215
e + D_2H^+	Recombination	0−50 eV	Exp	1215
e + Cs	Elastic Scattering	0.8−7 eV	Th	1216
e + Cs	Angular Scattering	0.8−7 eV	Th	1216
e + He	Ionization	106 eV	Exp	1217
e + Si^{9+}	Excitation	0−5000 eV	Th	1218
e + Cl^{12+}	Excitation	0−5000 eV	Th	1218
e + Ar^{13+}	Excitation	0−5000 eV	Th	1218
e + Si	Ionization	0−5000 eV	Th	1218
e + Si^{2+}	Ionization	0−5000 eV	Th	1218
e + Si^{3+}	Ionization	0−5000 eV	Th	1218
e + Si^{7+}	Ionization	0−5000 eV	Th	1218
e + Cl^{3+}	Ionization	0−5000 eV	Th	1218
e + Ar^{4+}	Ionization	0−5000 eV	Th	1218
e + H	Angular Scattering	14.6−25 eV	Th	1219
e + H	Ionization	14.6−25 eV	Th	1219
e + Ne^{9+}	Excitation	125−12,500 eV	Th	1220
e + Ne^{4+}	Ionization	125−12,500 eV	Th	1220
e + Au^{47+}	Ionization	125−12,500 eV	Th	1220
e + H_2	Angular Scattering	40−200 eV	Exp	1221
e + H_2	Excitation	40−200 eV	Exp	1221
e + Ti^{21+}	Recombination	3−11 keV	Exp	1222
e + Ti^{21+}	Fluorescence	3−11 keV	Exp	1222
e + Au	Excitation	4.28−577 eV	E/T	1223
e + He	Angular Scattering	5.6 keV	Th	1224
e + He	Ionization	5.6 keV	Th	1224
e + In	Elastic Scattering	10−100 eV	E/T	1225
e + In	Angular Scattering	10−100 eV	E/T	1225
e + Ba^+	Recombination	0 eV	Exp	1226
e + Ba^{+*}	Recombination	0 eV	Exp	1226
e + HCO^+	Dissociation	0.001−1 eV	Th	1227
e + DCO^+	Dissociation	0.001−1 eV	Th	1227
e + HCO^+	Recombination	0.001−1 eV	Th	1227
e + DCO^+	Recombination	0.001−1 eV	Th	1227
e + W^{54+}	Excitation	8.8−25 keV	Exp	1228
e + W^{55+}	Excitation	8.8−25 keV	Exp	1228
e + W^{56+}	Excitation	8.8−25 keV	Exp	1228

e + W^{57+}	Excitation	8.8−25 keV	Exp	1228
e + W^{58+}	Excitation	8.8−25 keV	Exp	1228
e + W^{59+}	Excitation	8.8−25 keV	Exp	1228
e + W^{60+}	Excitation	8.8−25 keV	Exp	1228
e + W^{61+}	Excitation	8.8−25 keV	Exp	1228
e + W^{62+}	Excitation	8.8−25 keV	Exp	1228
e + W^{63+}	Excitation	8.8−25 keV	Exp	1228
e + Kr	Elastic Scattering	20−100 eV	Th	1229
e + He	Ionization	537−705 eV	Exp	1230
e + H_2	Ionization	537−705 eV	Exp	1230
e + C_6H_6	Elastic Scattering	30−5000 eV	Th	1231
e + C_6F_6	Elastic Scattering	30−5000 eV	Th	1231
e + C_6H_{14}	Elastic Scattering	30−5000 eV	Th	1231
e + C_6H_{12}	Elastic Scattering	30−5000 eV	Th	1231
e + C_6F_{14}	Elastic Scattering	30−5000 eV	Th	1231
e + C_8H_{16}	Elastic Scattering	30−5000 eV	Th	1231
e + C_8H_{18}	Elastic Scattering	30−5000 eV	Th	1231
e + C_8F_{18}	Elastic Scattering	30−5000 eV	Th	1231
e + C_6H_6	Total Scattering	30−5000 eV	Th	1231
e + C_6F_6	Total Scattering	30−5000 eV	Th	1231
e + C_6H_{14}	Total Scattering	30−5000 eV	Th	1231
e + C_6H_{12}	Total Scattering	30−5000 eV	Th	1231
e + C_6F_{14}	Total Scattering	30−5000 eV	Th	1231
e + C_8H_{16}	Total Scattering	30−5000 eV	Th	1231
e + C_8H_{18}	Total Scattering	30−5000 eV	Th	1231
e + C_8F_{18}	Total Scattering	30−5000 eV	Th	1231
e + C_6H_6	Electron Collisions	30−5000 eV	Th	1231
e + C_6F_6	Electron Collisions	30−5000 eV	Th	1231
e + C_6H_{14}	Electron Collisions	30−5000 eV	Th	1231
e + C_6H_{12}	Electron Collisions	30−5000 eV	Th	1231
e + C_6F_{14}	Electron Collisions	30−5000 eV	Th	1231
e + C_8H_{16}	Electron Collisions	30−5000 eV	Th	1231
e + C_8H_{18}	Electron Collisions	30−5000 eV	Th	1231
e + C_8F_{18}	Electron Collisions	30−5000 eV	Th	1231
e + Be	Line Broadening	2×10^4-24×10^4 K	Th	1232
e + Ar	Ionization	500 eV	E/T	1233
e + He	Ionization	5600 eV	E/T	1234
e + Yb	Elastic Scattering	2−2000 eV	E/T	1235
e + Yb	Angular Scattering	2−2000 eV	E/T	1235
e + Na	Angular Scattering	10−25 eV	E/T	1236
e + Mg	Angular Scattering	10−25 eV	E/T	1236
e + K	Angular Scattering	10−25 eV	E/T	1236
e + Ca	Angular Scattering	10−25 eV	E/T	1236
e + Na	Ionization	10−25 eV	E/T	1236
e + Mg	Ionization	10−25 eV	E/T	1236
e + K	Ionization	10−25 eV	E/T	1236
e + Ca	Ionization	10−25 eV	E/T	1236
e + Na	Excitation	30−36 eV	E/T	1237
e + H	De-excitation	1−2000 eV	Th	1238
e + H^*	De-excitation	1−2000 eV	Th	1238
e + H	Fluorescence	1−2000 eV	Th	1238
e + H^*	Fluorescence	1−2000 eV	Th	1238
e + Ca	Attachment	0−8 eV	Th	1239
e + Sr	Attachment	0−8 eV	Th	1239
e + Ce	Attachment	0−8 eV	Th	1239
e + Ca	Elastic Scattering	0−8 eV	Th	1239
e + Sr	Elastic Scattering	0−8 eV	Th	1239

e + Ce	Elastic Scattering	0−8 eV	Th	1239
e + Ca	Angular Scattering	0−8 eV	Th	1239
e + Sr	Angular Scattering	0−8 eV	Th	1239
e + Ce	Angular Scattering	0−8 eV	Th	1239
e + NeH^+	Dissociation	9−2495 eV	Exp	1240
e + NeD^+	Dissociation	9−2495 eV	Exp	1240
e + NeH^+	Excitation	9−2495 eV	Exp	1240
e + NeD^+	Excitation	9−2495 eV	Exp	1240
e + NeH^+	Ionization	9−2495 eV	Exp	1240
e + NeD^+	Ionization	9−2495 eV	Exp	1240
e + CH_4	Elastic Scattering	5−100 eV	E/T	1241
e + CH_4	Angular Scattering	5−100 eV	E/T	1241
e + $(H_2O)_2$	Elastic Scattering	0−14 eV	Th	1242
e + H	Angular Scattering	17.6 eV	Th	1243
e + H	Ionization	17.6 eV	Th	1243
e + Ca	De-excitation	40−55 eV	Exp	1244
e + Ca^*	De-excitation	40−55 eV	Exp	1244
e + Ca	Elastic Scattering	40−55 eV	Exp	1244
e + Ca	Excitation	40−55 eV	Exp	1244
e + H_2	Elastic Scattering	1−20 eV	Th	1245
e + H_2O	Elastic Scattering	1−20 eV	Th	1245
e + CH_4	Elastic Scattering	1−20 eV	Th	1245
e + C_3H_6	Elastic Scattering	1−20 eV	Th	1245
e + H_2	Excitation	1−20 eV	Th	1245
e + H_2O	Excitation	1−20 eV	Th	1245
e + CH_4	Excitation	1−20 eV	Th	1245
e + C_3H_6	Excitation	1−20 eV	Th	1245
e + Ar	Angular Scattering	11−24 eV	Th	1246
e + Ar	Excitation	11−24 eV	Th	1246
e + H	Angular Scattering	13.7−1365 eV	Th	1247
e + He	Angular Scattering	13.7−1365 eV	Th	1247
e + He^+	Angular Scattering	13.7−1365 eV	Th	1247
e + Li^+	Angular Scattering	13.7−1365 eV	Th	1247
e + Li^{2+}	Angular Scattering	13.7−1365 eV	Th	1247
e + Be^{2+}	Angular Scattering	13.7−1365 eV	Th	1247
e + Be^{3+}	Angular Scattering	13.7−1365 eV	Th	1247
e + Ne^{8+}	Angular Scattering	13.7−1365 eV	Th	1247
e + Ne^{9+}	Angular Scattering	13.7−1365 eV	Th	1247
e + H	Ionization	13.7−1365 eV	Th	1247
e + He	Ionization	13.7−1365 eV	Th	1247
e + He^+	Ionization	13.7−1365 eV	Th	1247
e + Li^+	Ionization	13.7−1365 eV	Th	1247
e + Li^{2+}	Ionization	13.7−1365 eV	Th	1247
e + Be^{2+}	Ionization	13.7−1365 eV	Th	1247
e + Be^{3+}	Ionization	13.7−1365 eV	Th	1247
e + Ne^{8+}	Ionization	13.7−1365 eV	Th	1247
e + Ne^{9+}	Ionization	13.7−1365 eV	Th	1247
e + Mg	Excitation	400 eV	Th	1248
e + Mg	Ionization	400 eV	Th	1248
e + CO_2	Excitation	20−200 eV	E/T	1249
e + Ne	Angular Scattering	600 eV	E/T	1250
e + He	Ionization	600 eV	E/T	1250
e + Ne	Ionization	600 eV	E/T	1250
e + He	Elastic Scattering	17 eV	Exp	1251
e + H_2	Elastic Scattering	1−30 eV	Exp	1252
e + N_2	Elastic Scattering	1−30 eV	Exp	1252
e + Ne^+	Ionization	41−2500 eV	E/T	1253

e + Pt	Attachment	0−5 eV	Th	1254
e + Au	Attachment	0−5 eV	Th	1254
e + Pt	Elastic Scattering	0−5 eV	Th	1254
e + Au	Elastic Scattering	0−5 eV	Th	1254
e + Pt	Total Scattering	0−5 eV	Th	1254
e + Au	Total Scattering	0−5 eV	Th	1254
e + $\mathbf{CH_4}$	Excitation	0−20 eV	E/T	1255
e + Ar	Excitation	25−100 eV	Exp	1256
e + $\mathbf{Xe^{26+}}$	Excitation	10−1500 eV	Th	1257
e + $\mathbf{S^{12+}}$	Excitation	10−225 Ry	Th	1258
e + $\mathbf{Fe^{8+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Fe^{16+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Fe^{24+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Fe^{25+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Fe^{26+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Ni^{10+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Ni^{18+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Ni^{26+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Ni^{27+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Ni^{28+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Cu^{11+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Cu^{19+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Cu^{27+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Cu^{28+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Cu^{29+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Mo^{6+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Mo^{14+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Mo^{24+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Mo^{32+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Mo^{40+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Mo^{41+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Mo^{42+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{W^{6+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{W^{28+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{W^{38+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{W^{46+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{W^{56+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{W^{64+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{W^{72+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{W^{73+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{W^{74+}}$	Recombination	4−50,000 eV	Th	1259
e + $\mathbf{Ar^{14+}}$	Excitation	10−300 Ry	Th	1260
e + Be	Excitation	0.1−10,000 eV	Th	1261
e + $\mathbf{Be^{+}}$	Excitation	0.1−10,000 eV	Th	1261
e + $\mathbf{Be^{2+}}$	Excitation	0.1−10,000 eV	Th	1261
e + $\mathbf{Be^{3+}}$	Excitation	0.1−10,000 eV	Th	1261
e + Be	Ionization	0.1−10,000 eV	Th	1261
e + $\mathbf{Be^{+}}$	Ionization	0.1−10,000 eV	Th	1261
e + $\mathbf{Be^{2+}}$	Ionization	0.1−10,000 eV	Th	1261
e + $\mathbf{Be^{3+}}$	Ionization	0.1−10,000 eV	Th	1261
e + He	Excitation	10^{-1}-10^{5} eV	E/T	1262
e + $\mathbf{He^{*}}$	Excitation	10^{-1}-10^{5} eV	E/T	1262
e + He	Ionization	10^{-1}-10^{5} eV	E/T	1262
e + $\mathbf{He^{*}}$	Ionization	10^{-1}-10^{5} eV	E/T	1262
e + $\mathbf{Al^{+}}$	Recombination	10^{2}-10^{7} K	Th	1263
e + $\mathbf{Si^{2+}}$	Recombination	10^{2}-10^{7} K	Th	1263
e + $\mathbf{P^{3+}}$	Recombination	10^{2}-10^{7} K	Th	1263

e + S^{4+}	Recombination	10^2-10^7 K	Th	1263
e + Cl^{5+}	Recombination	10^2-10^7 K	Th	1263
e + Ar^{6+}	Recombination	10^2-10^7 K	Th	1263
e + K^{7+}	Recombination	10^2-10^7 K	Th	1263
e + Ca^{8+}	Recombination	10^2-10^7 K	Th	1263
e + Sc^{9+}	Recombination	10^2-10^7 K	Th	1263
e + Ti^{10+}	Recombination	10^2-10^7 K	Th	1263
e + V^{11+}	Recombination	10^2-10^7 K	Th	1263
e + Cr^{12+}	Recombination	10^2-10^7 K	Th	1263
e + Mn^{13+}	Recombination	10^2-10^7 K	Th	1263
e + Fe^{14+}	Recombination	10^2-10^7 K	Th	1263
e + Co^{15+}	Recombination	10^2-10^7 K	Th	1263
e + Ni^{16+}	Recombination	10^2-10^7 K	Th	1263
e + Cu^{17+}	Recombination	10^2-10^7 K	Th	1263
e + Zn^{18+}	Recombination	10^2-10^7 K	Th	1263
e + Kr^{24+}	Recombination	10^2-10^7 K	Th	1263
e + Mo^{30+}	Recombination	10^2-10^7 K	Th	1263
e + Xe^{42+}	Recombination	10^2-10^7 K	Th	1263
e + Fe^{+}	Excitation	30-10^5 K	Th	1264
e + Ni^{10+}	Excitation	10^2-10^7 K	Th	1265
e + Al^{12+}	Excitation	4.4−6.8 log T K	Th	1266
e + Al^{12+*}	Excitation	4.4−6.8 log T K	Th	1266
e + Fe^{6+}	Excitation	10^4-10^8 K	Th	1267
e + Fe^{17+}	Excitation	17−12 $\AA$	E/T	1268
e + Ni^{19+}	Excitation	17−12 $\AA$	E/T	1268
e + H^{-}	Ionization	0.0−1.0 Ry	Th	1269
e + D_3S^{+}	Dissociation	0.0−0.1 eV	Exp	1270
e + H_3S^{+}	Dissociation	0.0−0.1 eV	Exp	1270
e + D_3S^{+}	Recombination	0.0−0.1 eV	Exp	1270
e + H_3S^{+}	Recombination	0.0−0.1 eV	Exp	1270
e + CH_4	Elastic Scattering	30−5000 eV	E/T	1271
e + CH_4	Electron Collisions	30−5000 eV	E/T	1271
e + $H_3{}^{+}$	Dissociation	10^{-4}-1.0 eV	Th	1272
e + $H_3{}^{+}$	Recombination	10^{-4}-1.0 eV	Th	1272
e + F_2	Elastic Scattering	0.0−12.0 eV	Th	1273
e + Ni^{10+}	Excitation	0−200 Ry	Th	1274
e + Ni^{10+}	Ionization	0−200 Ry	Th	1274
e + H	Angular Scattering	20−200 eV	Th	1275
e + H	Excitation	20−200 eV	Th	1275
e + H	Ionization	0−10,000 eV	Th	1276
e + A	Ionization	0−10,000 eV	Th	1276
e + Na	Ionization	2−100 keV/u	Th	1277
e + P	Ionization	8−5000 eV	Th	1278
e + As	Ionization	8−5000 eV	Th	1278
e + Sb	Ionization	8−5000 eV	Th	1278
e + Bi	Ionization	8−5000 eV	Th	1278
e + Xe^{10+}	Recombination	1−1000 eV	Th	1279
e + H^{-}	Detachment	0−170 eV	Exp	1280
e + Sc^{3+}	Recombination	0−45 eV	Th	1281
e + Ti^{4+}	Recombination	0−45 eV	Th	1281
e + H_2	Ionization	60 MeV; 2.4 keV; 0−20 a.u.	Th	1282
e + D_2	Ionization	60 MeV; 2.4 keV; 0−20 a.u.	Th	1282
e + Ar	Angular Scattering	500 eV	Exp	1283
e + Ar	Ionization	500 eV	Exp	1283
e + Ar	Angular Scattering	200 eV	Th	1284
e + Ar	Ionization	200 eV	Th	1284
e + He	Angular Scattering	730 eV	Th	1285

e + He	Ionization	730 eV	Th	1285
e + Au	Ionization	1−100 keV	Th	1286
e + He	Excitation	1000−1600 eV	Th	1287
e + He	Ionization	1000−1600 eV	Th	1287
e + H_2O	Ionization	10^{-2}-1 MeV	Th	1288
e + A	Elastic Scattering	0.05−30 keV	Th	1289
e + A	Angular Scattering	0.05−30 keV	Th	1289
e + Be	Elastic Scattering	20-10^4 eV	Th	1290
e + Cu	Elastic Scattering	20-10^4 eV	Th	1290
e + Au	Elastic Scattering	20-10^4 eV	Th	1290
e + Kr	Ionization	18−500 eV	Exp	1292
e + Xe	Ionization	18−500 eV	Exp	1292
e + Mg^+	Ionization	0−50 keV	Th	1293
e + Ar^{7+}	Ionization	0−50 keV	Th	1293
e + Kr^{25+}	Ionization	0−50 keV	Th	1293
e + Sn^{39+}	Ionization	0−50 keV	Th	1293
e + Xe^{43+}	Ionization	0−50 keV	Th	1293
e + W^{63+}	Ionization	0−50 keV	Th	1293
e + H_2	De-excitation	10^{-6}-1 eV	Th	1294
e + N_2	De-excitation	10^{-6}-1 eV	Th	1294
e + H	Elastic Scattering	0.4 a.u.	Th	1295
e + He	Ionization	1 keV	E/T	1296
e + Mg	Ionization	1 keV	E/T	1296
e + Mg	Angular Scattering	10−60 eV	Exp	1297
e + Mg	Total Scattering	10−60 eV	Exp	1297
e + Mg	Excitation	10−60 eV	Exp	1297
e + H_2	Dissociation	612 eV	Th	1298
e + H_2	Angular Scattering	612 eV	Th	1298
e + H_2	Ionization	612 eV	Th	1298
e + Fe^{15+}	Excitation	740−7800 eV; 5000−1,000,000 K	Th	1299
e + Kr^{6+}	Excitation	1.05−1.35 Ry	E/T	1300
e + He^+	Elastic Scattering	0.1−1.6 Ry	Th	1301
e + Li^{2+}	Elastic Scattering	0.1−1.6 Ry	Th	1301
e + He^+	Angular Scattering	0.1−1.6 Ry	Th	1301
e + Li^{2+}	Angular Scattering	0.1−1.6 Ry	Th	1301
e + Be	Ionization	0−500 keV	Th	1302
e + $H_2{}^+$	Dissociation	0−180 meV	E/T	1303
e + $H_2{}^+$	De-excitation	0−180 meV	E/T	1303
e + $H_2{}^+$	Elastic Scattering	0−180 meV	E/T	1303
e + $H_2{}^+$	Recombination	0−180 meV	E/T	1303
e + H	Ionization	0.0075−0.01 a.u.	Th	1304
e + Mg	Ionization	400−1000 eV	E/T	1305
e + Kr^+	Line Broadening	16,000−28,000 K	Exp	1306
e + N_2	Angular Scattering	17.5−100 eV	Exp	1307
e + N_2	Excitation	17.5−100 eV	Exp	1307
e + F_2	Dissociation	0−5.4 eV	Th	1308
e + N_2	Elastic Scattering	0−5.4 eV	Th	1308
e + NO	Elastic Scattering	0−5.4 eV	Th	1308
e + F_2	Elastic Scattering	0−5.4 eV	Th	1308
e + N_2	Excitation	0−5.4 eV	Th	1308
e + NO	Excitation	0−5.4 eV	Th	1308
e + F_2	Excitation	0−5.4 eV	Th	1308
e + CO	Angular Scattering	30−200 eV	E/T	1309
e + CO	Excitation	30−200 eV	E/T	1309
e + H_2	Angular Scattering	11−14 eV	Th	1310
e + H_2	Excitation	11−14 eV	Th	1310
e + C_4H_4O	Excitation	0−7 eV	Th	1311

e + O_2	Elastic Scattering	0−17 eV	Th	1312
e + S_2	Elastic Scattering	0−17 eV	Th	1312
e + B_2	Elastic Scattering	0−17 eV	Th	1312
e + Si_2	Elastic Scattering	0−17 eV	Th	1312
e + O_2	Angular Scattering	0−17 eV	Th	1312
e + S_2	Angular Scattering	0−17 eV	Th	1312
e + B_2	Angular Scattering	0−17 eV	Th	1312
e + Si_2	Angular Scattering	0−17 eV	Th	1312
e + Pb	Elastic Scattering	10−100 eV	E/T	1313
e + Pb	Angular Scattering	10−100 eV	E/T	1313
e + Pb	Total Scattering	10−100 eV	E/T	1313
e + H_2	Elastic Scattering	1−10 eV	Th	1314
e + N_2	Elastic Scattering	1−10 eV	Th	1314
e + H_2	Angular Scattering	1−10 eV	Th	1314
e + N_2	Angular Scattering	1−10 eV	Th	1314
e + H_2	Excitation	1−10 eV	Th	1314
e + N_2	Excitation	1−10 eV	Th	1314
e + C_2H_2	Attachment	0−16 eV	Exp	1315
e + C_4H_2	Attachment	0−16 eV	Exp	1315
e + C_2H_2	Dissociation	0−16 eV	Exp	1315
e + C_4H_2	Dissociation	0−16 eV	Exp	1315
e + Al	Ionization	10^2-10^9 eV	Th	1316
e + Ar	Ionization	10^2-10^9 eV	Th	1316
e + Ti	Ionization	10^2-10^9 eV	Th	1316
e + Cr	Ionization	10^2-10^9 eV	Th	1316
e + Ni	Ionization	10^2-10^9 eV	Th	1316
e + Cu	Ionization	10^2-10^9 eV	Th	1316
e + Ge	Ionization	10^2-10^9 eV	Th	1316
e + Sr	Ionization	10^2-10^9 eV	Th	1316
e + Ag	Ionization	10^2-10^9 eV	Th	1316
e + Xe	Ionization	10^2-10^9 eV	Th	1316
e + W	Ionization	10^2-10^9 eV	Th	1316
e + Au	Ionization	10^2-10^9 eV	Th	1316
e + Pb	Ionization	10^2-10^9 eV	Th	1316
e + Bi	Ionization	10^2-10^9 eV	Th	1316
e + U	Ionization	10^2-10^9 eV	Th	1316
e + Ni	Ionization	8−100 keV	Th	1317
e + C_2H_5OH	Elastic Scattering	1−100 eV	E/T	1318
e + CH_3OH	Elastic Scattering	1−100 eV	E/T	1318
e + C_2H_5OH	Angular Scattering	1−100 eV	E/T	1318
e + CH_3OH	Angular Scattering	1−100 eV	E/T	1318
e + NeH^+	Dissociation	1−19.5 eV	Th	1319
e + NeD^+	Dissociation	1−19.5 eV	Th	1319
e + NeH^+	Recombination	1−19.5 eV	Th	1319
e + NeD^+	Recombination	1−19.5 eV	Th	1319
e + NeH^+	Excitation	1−19.5 eV	Th	1319
e + NeD^+	Excitation	1−19.5 eV	Th	1319
e + C_2H_2	Attachment	0−7 eV	Th	1320
e + C_2H_2	Dissociation	0−7 eV	Th	1320
e + C_2H_4	Elastic Scattering	0−20 eV	E/T	1321
e + C_2H_4	Angular Scattering	0−20 eV	E/T	1321
e + C_2H_4	Excitation	0−20 eV	E/T	1321
e + C_3H_6	Excitation	0.2−1000 eV	Exp	1322
e + C-C_3H_6	Excitation	0.2−1000 eV	Exp	1322
e + C_2H_4	Angular Scattering	3−8 eV	Th	1323
e + C_2H_4	Excitation	3−8 eV	Th	1323
e + SF_6	Attachment	0.1−1000 MeV	Th	1324

e + C_2H_2	Dissociation	300−400 eV	Exp	1325
e + C_2H_2	Excitation	300−400 eV	Exp	1325
e + C_2H_2	Ionization	300−400 eV	Exp	1325
e + N_2	Fluorescence	3 MeV; 300 deg K	Exp	1326
e + N_2	Fluorescence	0.5−420 MeV	Exp	1327
e + N_2	Fluorescence	3 MeV	Exp	1328
e + N_2	Fluorescence	14−350 MeV	Exp	1329
e + N_2	Fluorescence	250−2000 keV	Exp	1330
e + N_2	Fluorescence	30 keV	Exp	1331
e + N_2	Fluorescence	0.85 MeV	Exp	1332
e + N_2	Fluorescence	1×10^0-1×10^{10} eV	Th	1333
e + N_2	Fluorescence	0.85 MeV	Th	1334
e + N_2	Fluorescence	10 keV; 300 deg K	Exp	1335
e + N_2	Fluorescence	50 keV; 300 deg K	E/T	1336
e + $H_2{}^+$	Dissociation	2−12 eV	Th	1337
e + HD^+	Dissociation	2−12 eV	Th	1337
e + $H_2{}^+$	Excitation	2−12 eV	Th	1337
e + HD^+	Excitation	2−12 eV	Th	1337
e + C^+	Excitation	0-10^6 K	Th	1338
e + O^{3+}	Excitation	0-10^6 K	Th	1339
e + Ar^{17+}	Excitation	0−800 Ry	Th	1340
e + Mg^{8+}	Excitation	0-10^8 K	Th	1341
e + Fe^{25+}	Excitation	0−1500 Ry	Th	1342
e + He	Ionization	37−205 eV	Th	1344
e + Ne	Ionization	37−205 eV	Th	1344
e + Ar	Ionization	37−205 eV	Th	1344
e + Br	Ionization	10−10,000 eV	Th	1345
e + I	Ionization	10−10,000 eV	Th	1345
e + Br_2	Ionization	10−10,000 eV	Th	1345
e + HBr	Ionization	10−10,000 eV	Th	1345
e + I_2	Ionization	10−10,000 eV	Th	1345
e + HCl	Ionization	10−10,000 eV	Th	1345
e + HI	Ionization	10−10,000 eV	Th	1345
e + Ca	Excitation	10−55 eV	Th	1346
e + $C_2{}^-$	Detachment	0−15 eV	Th	1347
e + $C_2{}^-$	Excitation	0−15 eV	Th	1347
e + Cu	Ionization	500−1000 keV	Th	1348
e + Ag	Ionization	500−1000 keV	Th	1348
e + Li_2	Excitation	56.38−80 eV	Exp	1349
e + H_2S	Elastic Scattering	1−500 eV	E/T	1350
e + H_2S	Angular Scattering	1−500 eV	E/T	1350
e + C_4H_{10}	Elastic Scattering	50−1000 eV	Exp	1351
e + C_6H_6	Elastic Scattering	50−1000 eV	Exp	1351
e + C_4H_{10}	Angular Scattering	50−1000 eV	Exp	1351
e + C_6H_6	Angular Scattering	50−1000 eV	Exp	1351
e + Li_2	Excitation	5 eV	Th	1352
e + He	Ionization	5.6 keV	Th	1353
e + He	Ionization	5.6 keV	Th	1354
e + Kr^{26+}	Excitation	100−220 Ry	Th	1355
e + Na	Angular Scattering	6−100 eV	Th	1356
e + Na	Ionization	6−100 eV	Th	1356
e + SO_2	Elastic Scattering	10−2000 eV	Th	1357
e + SO	Elastic Scattering	10−2000 eV	Th	1357
e + SO_2Cl	Elastic Scattering	10−2000 eV	Th	1357
e + SO_2F	Elastic Scattering	10−2000 eV	Th	1357
e + SO_2	Excitation	10−2000 eV	Th	1357
e + SO	Excitation	10−2000 eV	Th	1357

e + SO_2Cl	Excitation	10−2000 eV	Th	1357
e + SO_2F	Excitation	10−2000 eV	Th	1357
e + SO_2	Ionization	10−2000 eV	Th	1357
e + SO	Ionization	10−2000 eV	Th	1357
e + SO_2Cl	Ionization	10−2000 eV	Th	1357
e + SO_2F	Ionization	10−2000 eV	Th	1357
e + He	Excitation	0−4000 eV	Th	1358
e + Ne	Excitation	0−4000 eV	Th	1358
e + Ar	Excitation	0−4000 eV	Th	1358
e + Kr	Excitation	0−4000 eV	Th	1358
e + Xe	Excitation	0−4000 eV	Th	1358
e + H_2	Excitation	0−4000 eV	Th	1358
e + N_2	Excitation	0−4000 eV	Th	1358
e + He	Ionization	0−4000 eV	Th	1358
e + Ne	Ionization	0−4000 eV	Th	1358
e + Ar	Ionization	0−4000 eV	Th	1358
e + Kr	Ionization	0−4000 eV	Th	1358
e + Xe	Ionization	0−4000 eV	Th	1358
e + H_2	Ionization	0−4000 eV	Th	1358
e + N_2	Ionization	0−4000 eV	Th	1358
e + BF_3	Elastic Scattering	20−2000 eV	Th	1359
e + BCl_3	Elastic Scattering	20−2000 eV	Th	1359
e + BF_3	Ionization	20−2000 eV	Th	1359
e + BCl_3	Ionization	20−2000 eV	Th	1359
e + Xe	Excitation	1−150 eV	Th	1360
e + Xe^*	Excitation	1−150 eV	Th	1360
e + HF^+	Dissociation	0.04−10 eV	Th	1361
e + HF^+	Recombination	0.04−10 eV	Th	1361
e + Zn	Attachment	4−9.4 eV	Exp	1362
e + Ba^{46+}	Excitation	5−5.2 keV	Th	1363
e + Lu	Elastic Scattering	0−0.1 eV	Th	1364
e + Hf	Elastic Scattering	0−0.1 eV	Th	1364
e + Lu	Angular Scattering	0−0.1 eV	Th	1364
e + Hf	Angular Scattering	0−0.1 eV	Th	1364
e + SF	Attachment	0−2 eV	Th	1365
e + HBr	Attachment	0−12 eV	Exp	1366
e + DBr	Attachment	0−12 eV	Exp	1366
e + HCl	Attachment	0−12 eV	Exp	1366
e + DCl	Attachment	0−12 eV	Exp	1366
e + HBr	Dissociation	0−12 eV	Exp	1366
e + DBr	Dissociation	0−12 eV	Exp	1366
e + HCl	Dissociation	0−12 eV	Exp	1366
e + DCl	Dissociation	0−12 eV	Exp	1366
e + U^{90+}	Recombination	125 MeV/u	E/T	1367
e + U^{91+}	Recombination	125 MeV/u	E/T	1367
e + Zn	Fluorescence	10−18 eV	Exp	1368
e + Zn	Excitation	10−18 eV	Exp	1368
e + He	Angular Scattering	194.6−243 eV	E/T	1369
e + He	Excitation	194.6−243 eV	E/T	1369
e + He	Ionization	194.6−243 eV	E/T	1369
e + Ne	Elastic Scattering	5−100 eV	E/T	1370
e + Ne	Angular Scattering	5−100 eV	E/T	1370
e + H_2O	Attachment	6−18 eV	Th	1371
e + H_2O	Dissociation	6−18 eV	Th	1371
e + Li_2	Ionization	0−50 eV	Th	1372
e + ${Li_2}^+$	Ionization	0−50 eV	Th	1372
e + H_2	Excitation	7−14 eV	Th	1373

e + Au	Excitation	2−6 eV	E/T	1374
e + NH_3	Elastic Scattering	0.020−10 eV	Exp	1375
e + H_2S	Elastic Scattering	0.020−10 eV	Exp	1375
e + COS	Elastic Scattering	0.020−10 eV	Exp	1375
e + NH_3	Excitation	0.020−10 eV	Exp	1375
e + H_2S	Excitation	0.020−10 eV	Exp	1375
e + COS	Excitation	0.020−10 eV	Exp	1375
e + Sn^{22+}	Excitation	37.5−8436 eV	Th	1376
e + Na	Excitation	1-10^7 eV	E/T	1377
e + Na	Ionization	1-10^7 eV	E/T	1377
e + H	Excitation	0.5−6500 Ry	Th	1378
e + Sn	Excitation	0.5−6500 Ry	Th	1378
e + H	Ionization	0.5−6500 Ry	Th	1378
e + Sn	Ionization	0.5−6500 Ry	Th	1378
e + Al	Bremsstrahlung	765 keV	E/T	1379
e + Ti	Bremsstrahlung	765 keV	E/T	1379
e + Sn	Bremsstrahlung	765 keV	E/T	1379
e + Pb	Bremsstrahlung	765 keV	E/T	1379
e + He	Ionization	106 eV	E/T	1380
e + Fe^{15+}	Excitation	10^4-10^8 K	Th	1381
e + H_2	Ionization	8 keV	Th	1382
e + Na	Excitation	10−1000 eV	E/T	1383
e + Na^*	Excitation	10−1000 eV	E/T	1383
e + C^+	Ionization	15−150 eV	E/T	1384
e + H_2O	Elastic Scattering	1−100 eV	E/T	1385
e + H_2O	Angular Scattering	1−100 eV	E/T	1385
e + Ni^{18+}	Excitation	0−250 Ry	Th	1386
e + Ne^{6+}	Recombination	10^3-3×10^5 K	E/T	1387
e + Fe^{18+}	Excitation	10^5-10^8 K	E/T	1388
e + O^{6+}	Excitation	0-2×10^6 K	E/T	1389
e + H_2O	Excitation	200−5000 K	Th	1390
e + Fe^{7+}	Recombination	0.2−1000 eV	E/T	1391
e + Fe^{8+}	Recombination	0.2−1000 eV	E/T	1391
e + Mg^{8+}	Excitation	10^3-10^7 K	Th	1392
e + Mg^{4+}	Excitation	10^3-10^7 K	Th	1393
e + S^{5+}	Recombination	0−20 eV	E/T	1394
e + Ar^{7+}	Recombination	0−20 eV	E/T	1394
e + Si^{9+}	Excitation	10^4-10^7 K	Th	1395
e + Ar^{2+}	Excitation	10^3-10^5 K	Th	1396
e + Mg^+	Excitation	10^2-10^9 K	Th	1397
e + Al^{2+}	Excitation	10^2-10^9 K	Th	1397
e + Si^{3+}	Excitation	10^2-10^9 K	Th	1397
e + P^{4+}	Excitation	10^2-10^9 K	Th	1397
e + S^{5+}	Excitation	10^2-10^9 K	Th	1397
e + Cl^{6+}	Excitation	10^2-10^9 K	Th	1397
e + Ar^{7+}	Excitation	10^2-10^9 K	Th	1397
e + K^{8+}	Excitation	10^2-10^9 K	Th	1397
e + Ca^{9+}	Excitation	10^2-10^9 K	Th	1397
e + Sc^{10+}	Excitation	10^2-10^9 K	Th	1397
e + Ti^{11+}	Excitation	10^2-10^9 K	Th	1397
e + V^{12+}	Excitation	10^2-10^9 K	Th	1397
e + Cr^{13+}	Excitation	10^2-10^9 K	Th	1397
e + Mn^{14+}	Excitation	10^2-10^9 K	Th	1397
e + Fe^{15+}	Excitation	10^2-10^9 K	Th	1397
e + Co^{16+}	Excitation	10^2-10^9 K	Th	1397
e + Ni^{17+}	Excitation	10^2-10^9 K	Th	1397
e + Cu^{18+}	Excitation	10^2-10^9 K	Th	1397

e + Zn^{19+}	Excitation	10^2-10^9 K	Th	1397
e + Ga^{20+}	Excitation	10^2-10^9 K	Th	1397
e + Ge^{21+}	Excitation	10^2-10^9 K	Th	1397
e + As^{22+}	Excitation	10^2-10^9 K	Th	1397
e + Se^{23+}	Excitation	10^2-10^9 K	Th	1397
e + Br^{24+}	Excitation	10^2-10^9 K	Th	1397
e + Kr^{25+}	Excitation	10^2-10^9 K	Th	1397
e + S^{5+}	Recombination	10^4-10^7 K	Exp	1398
e + Ar^{7+}	Recombination	10^4-10^7 K	Exp	1398
e + Fe^{9+}	Recombination	0−75 eV	E/T	1399
e + Fe^{10+}	Recombination	0−75 eV	E/T	1399
e + Cu	Ionization		Th	1400
e + Ag	Ionization		Th	1400
e + CO	Ionization		Th	1401
e + N_2	Ionization		Th	1401
e + O_2	Ionization		Th	1401
e + He	Ionization		Th	1402
e + Li^{+}	Ionization		Th	1402
e + B^{3+}	Ionization		Th	1402
e + C^{4+}	Ionization		Th	1402
e + N^{5+}	Ionization		Th	1402
e + O^{6+}	Ionization		Th	1402
e + Ne^{8+}	Ionization		Th	1402
e + Na^{9+}	Ionization		Th	1402
e + Ar^{16+}	Ionization		Th	1402
e + Fe^{24+}	Ionization		Th	1402
e + Mo^{41+}	Ionization		Th	1402
e + Ag^{45+}	Ionization		Th	1402
e + U^{90+}	Ionization		Th	1402
e + K^{5+}	Excitation	0.1−10 E_i	Th	1403
e + Mo^{11+}	Excitation	0.1−10 E_i	Th	1403
e + Xe^{23+}	Excitation	0.1−10 E_i	Th	1403
e + Pr^{28+}	Excitation	0.1−10 E_i	Th	1403
e + Dy^{35+}	Excitation	0.1−10 E_i	Th	1403
e + K^{5+}	Ionization	0.1−10 E_i	Th	1403
e + Mo^{11+}	Ionization	0.1−10 E_i	Th	1403
e + Xe^{23+}	Ionization	0.1−10 E_i	Th	1403
e + Pr^{28+}	Ionization	0.1−10 E_i	Th	1403
e + Dy^{35+}	Ionization	0.1−10 E_i	Th	1403
e + CH_4	Dissociation	0−2.5 keV	Exp	1404
e + CD_4	Dissociation	0−2.5 keV	Exp	1404
e + CH_4	Ionization	0−2.5 keV	Exp	1404
e + CD_4	Ionization	0−2.5 keV	Exp	1404
e + $H_3{}^+$	Dissociation	60−1000 K	Exp	1405
e + $H_3{}^+$	Recombination	60−1000 K	Exp	1405
e + $(CH_2)_3O$	Recombination	1.0−400.0 eV	E/T	1406
e + C_3H_6O	Recombination	1.0−400.0 eV	E/T	1406
e + $(CH_2)_3O$	Excitation	1.0−400.0 eV	E/T	1406
e + C_3H_6O	Excitation	1.0−400.0 eV	E/T	1406
e + $C_4H_4N_2O_2$	Dissociation	0.0−5.0 eV	Th	1407
e + $C_4H_4N_2O_2$	Excitation	0.0−5.0 eV	Th	1407
e + H_3O^+	Dissociation	300 K	Exp	1408
e + H_3O^+	Recombination	300 K	Exp	1408
e + Xe^{10+}	Recombination	1−1000 eV	Th	1409
e + N_2	Elastic Scattering	2 keV; 3.7 MeV/amu	Exp	1410
e + N_2	Angular Scattering	2 keV; 3.7 MeV/amu	Exp	1410
e + N_2	Ionization	2 keV; 3.7 MeV/amu	Exp	1410

e + Ar	Ionization	350 eV	Exp	1411
e + In	Angular Scattering	10−100 eV	Exp	1412
e + In	Excitation	10−100 eV	Exp	1412
e + Ag	Elastic Scattering	10−100 eV	E/T	1413
e + Ag	Angular Scattering	10−100 eV	E/T	1413
e + Ar	Angular Scattering	500 eV	Exp	1414
e + Ar	Ionization	500 eV	Exp	1414
e + $\mathbf{CH_4}$	Ionization	0-10^3 eV	Th	1415
e + CO	Ionization	0-10^3 eV	Th	1415
e + $\mathbf{N_2}$	Ionization	0-10^3 eV	Th	1415
e + $\mathbf{O_2}$	Ionization	0-10^3 eV	Th	1415
e + Au	Bremsstrahlung	53 keV	Exp	1416
e + Kr	Angular Scattering	114.3−127.5 eV	E/T	1417
e + Kr	Ionization	114.3−127.5 eV	E/T	1417
e + $\mathbf{H^-}$	Angular Scattering	5500 eV	Th	1418
e + He	Angular Scattering	5500 eV	Th	1418
e + $\mathbf{Li^+}$	Angular Scattering	5500 eV	Th	1418
e + $\mathbf{Be^{2+}}$	Angular Scattering	5500 eV	Th	1418
e + $\mathbf{B^{3+}}$	Angular Scattering	5500 eV	Th	1418
e + $\mathbf{C^{4+}}$	Angular Scattering	5500 eV	Th	1418
e + $\mathbf{N^{5+}}$	Angular Scattering	5500 eV	Th	1418
e + $\mathbf{O^{6+}}$	Angular Scattering	5500 eV	Th	1418
e + $\mathbf{F^{7+}}$	Angular Scattering	5500 eV	Th	1418
e + $\mathbf{H^-}$	Ionization	5500 eV	Th	1418
e + He	Ionization	5500 eV	Th	1418
e + $\mathbf{Li^+}$	Ionization	5500 eV	Th	1418
e + $\mathbf{Be^{2+}}$	Ionization	5500 eV	Th	1418
e + $\mathbf{B^{3+}}$	Ionization	5500 eV	Th	1418
e + $\mathbf{C^{4+}}$	Ionization	5500 eV	Th	1418
e + $\mathbf{N^{5+}}$	Ionization	5500 eV	Th	1418
e + $\mathbf{O^{6+}}$	Ionization	5500 eV	Th	1418
e + $\mathbf{F^{7+}}$	Ionization	5500 eV	Th	1418
e + $\mathbf{C_3H_7OH}$	Elastic Scattering	1−100 eV	E/T	1419
e + $\mathbf{C_4H_9OH}$	Elastic Scattering	1−100 eV	E/T	1419
e + $\mathbf{C_3H_7OH}$	Angular Scattering	1−100 eV	E/T	1419
e + $\mathbf{C_4H_9OH}$	Angular Scattering	1−100 eV	E/T	1419
e + H	Excitation	5−200 eV	Th	1420
e + Ba	Excitation	5−200 eV	Th	1420
e + $\mathbf{H_2O}$	Elastic Scattering	10^{-2}-1 MeV	E/T	1421
e + $\mathbf{H_2O}$	Angular Scattering	10^{-2}-1 MeV	E/T	1421
e + He	Angular Scattering	1 keV	Th	1422
e + He	Ionization	1 keV	Th	1422
e + $\mathbf{H_2{}^+}$	Dissociation	7−35 MeV	Exp	1423
e + $\mathbf{HD^+}$	Dissociation	7−35 MeV	Exp	1423
e + $\mathbf{H_2{}^+}$	Recombination	7−35 MeV	Exp	1423
e + $\mathbf{HD^+}$	Recombination	7−35 MeV	Exp	1423
e + $\mathbf{H_2O}$	Elastic Scattering	1−100 eV	Exp	1424
e + $\mathbf{H_2O}$	Angular Scattering	1−100 eV	Exp	1424
e + $\mathbf{CH_4}$	Elastic Scattering	9−30 eV	Th	1425
e + $\mathbf{CH_4}$	Angular Scattering	9−30 eV	Th	1425
e + $\mathbf{Ca^{5+}}$	Excitation	0−65 eV	Th	1426
e + $\mathbf{H_2O}$	Elastic Scattering	10^{-2}-10 eV	Th	1427
e + $\mathbf{H_2O}$	Angular Scattering	10^{-2}-10 eV	Th	1427
e + He	Angular Scattering	500 eV	Th	1428
e + He	Excitation	500 eV	Th	1428
e + He	Ionization	500 eV	Th	1428
e + H	Elastic Scattering	1−6 keV	E/T	1429

e + C	Elastic Scattering	1−6 keV	E/T	1429
e + Xe	Elastic Scattering	1−6 keV	E/T	1429
e + CH_4	Elastic Scattering	1−6 keV	E/T	1429
e + $H_3{}^+$	Recombination	260 K	E/T	1430
e + OCS	Elastic Scattering	0.06−20 eV	Exp	1431
e + OCS	Angular Scattering	0.06−20 eV	Exp	1431
e + OCS	Excitation	0.06−20 eV	Exp	1431
e + NH_3	Dissociation	100 eV; 15−60 eV	E/T	1432
e + NH_3	Excitation	100 eV; 15−60 eV	E/T	1432
e + Fe^{5+}	Excitation	0−82 eV; 10,000−6,000,000 K	Th	1433
e + He^+	Excitation	near threshold	Th	1434
e + He^+	Ionization	near threshold	Th	1434
e + B^+	Ionization	20−150 eV	E/T	1435
e + Ar	Elastic Scattering	11−13.7 eV	E/T	1436
e + Ar	Angular Scattering	11−13.7 eV	E/T	1436
e + Ar	Excitation	11−13.7 eV	E/T	1436
e + K^+	Excitation	0−400 eV	Th	1437
e + Mg	Angular Scattering	40−100 eV	Th	1438
e + Mg	Excitation	40−100 eV	Th	1438
e + Be Z= 26-36	De-excitation	500−2000 eV	Th	1343
e + Be Z= 26-36	Line Broadening	500−2000 eV	Th	1343
e + Be Z= 26-36	Excitation	500−2000 eV	Th	1343
e + Cs	Elastic Scattering	7 eV	Th	1291
e + Cs	Excitation	7 eV	Th	1291
e + Cs	Ionization	7 eV	Th	1291

2.2.3 Heavy Particles Collisions

H^+ + Ne	Ionization	10^2-10^4 keV	Th	1443
H^+ + Ar	Ionization	10^2-10^4 keV	Th	1443
H^+ + Kr	Ionization	10^2-10^4 keV	Th	1443
H^+ + Xe	Ionization	10^2-10^4 keV	Th	1443
H^+ + Ne	Total Scattering	0.4−3 MeV	E/T	1444
H^+ + Ar	Total Scattering	0.4−3 MeV	E/T	1444
H^+ + Ne	Ionization	0.4−3 MeV	E/T	1444
H^+ + Ar	Ionization	0.4−3 MeV	E/T	1444
H^+ + He	Charge Transfer	25 keV	Exp	1448
H^+ + He	Total Scattering	25 keV	Exp	1448
H^+ + He	Total Scattering	75 keV	Th	1454
H^+ + He	Ionization	75 keV	Th	1454
H^- + He	Ionization	200 keV	Exp	1457
H + H_2	De-excitation	0-6 × 10^5 K	Th	1459
H + $H_2{}^*$	De-excitation	0-6 × 10^5 K	Th	1459
H + H_2	Excitation	0-6 × 10^5 K	Th	1459
H^+ + He	Interaction Potentials		Th	1460
H^+ + H_2	Dissociation	25 keV	Exp	1462
H^+ + H_2	Ionization	25 keV	Exp	1462
H^+ + He^+	Charge Transfer	0.5−4.0 a.u.	Th	1464
H^+ + H_2O	Charge Transfer	10 keV	Th	1477
H^+ + H_2O	Excitation	10 keV	Th	1477
H^+ + He	Charge Transfer	15−150 keV	Exp	1479
H^+ + He	Total Scattering	15−150 keV	Exp	1479
H^+ + H_2O	Total Scattering	0.1−100 MeV	Th	1480
H^+ + H_2O	Ionization	0.1−100 MeV	Th	1480
H^+ + Ne + hν	Charge Transfer	2−20 keV	Th	1481
H^+ + Ar + hν	Charge Transfer	2−20 keV	Th	1481

$H^+ + H_2$	Dissociation	10−10,000 eV	Th	1482
$H^+ + HD$	Dissociation	10−10,000 eV	Th	1482
$H^+ + HT$	Dissociation	10−10,000 eV	Th	1482
$H^+ + D_2$	Dissociation	10−10,000 eV	Th	1482
$H^+ + DT$	Dissociation	10−10,000 eV	Th	1482
$H^+ + T_2$	Dissociation	10−10,000 eV	Th	1482
$H^+ + H_2$	Charge Transfer	10−10,000 eV	Th	1482
$H^+ + HD$	Charge Transfer	10−10,000 eV	Th	1482
$H^+ + HT$	Charge Transfer	10−10,000 eV	Th	1482
$H^+ + D_2$	Charge Transfer	10−10,000 eV	Th	1482
$H^+ + DT$	Charge Transfer	10−10,000 eV	Th	1482
$H^+ + T_2$	Charge Transfer	10−10,000 eV	Th	1482
$H^+ + H_2$	Excitation	10−10,000 eV	Th	1482
$H^+ + HD$	Excitation	10−10,000 eV	Th	1482
$H^+ + HT$	Excitation	10−10,000 eV	Th	1482
$H^+ + D_2$	Excitation	10−10,000 eV	Th	1482
$H^+ + DT$	Excitation	10−10,000 eV	Th	1482
$H^+ + T_2$	Excitation	10−10,000 eV	Th	1482
$H + H_2O$	Dissociation	8−3500 keV	Exp	1499
$H^+ + H_2O$	Dissociation	8−3500 keV	Exp	1499
$H^+ + Ne$	Charge Transfer	0.6−20 keV	E/T	1500
$H^+ + Ne$	Ionization	100−1000 keV	E/T	1503
$H^+ + Ar$	Ionization	100−1000 keV	E/T	1503
$H + CO^+$	Charge Transfer	0.5−1000 eV/u	Th	1513
$H^+ + CO$	Charge Transfer	0.5−1000 eV/u	Th	1513
$H^+ + H_2$	Ionization	2.5−63 MeV/u	Th	1516
$H^+ + He$	Interaction Potentials		Th	1520
$H^+ + H_2O$	Charge Transfer	25−5000 keV	Th	1528
$H^+ + H_2O$	Ionization	25−5000 keV	Th	1528
$H + H_2$	Interaction Potentials		Th	1529
$H^- + He$	Total Scattering	200 keV	Exp	1531
$H^- + He$	Detachment	200 keV	Exp	1531
$H^- + He$	Ionization	200 keV	Exp	1531
$H^+ + C_2H_4$	Charge Transfer	0.018−4 keV/amu	E/T	1532
$H^+ + H$	Ionization	5−25 keV	Th	1535
$H + H$	De-excitation	10^{-5}-10^{-1} K	E/T	1536
$H^* + H^*$	De-excitation	10^{-5}-10^{-1} K	E/T	1536
$H^+ + He$	Ionization	2.5 MeV	Th	1544
$H^+ + He$	Total Scattering	2 MeV	Th	1545
$H^+ + Li$	Total Scattering	2 MeV	Th	1545
$H^+ + Be$	Total Scattering	2 MeV	Th	1545
$H^+ + He$	Ionization	2 MeV	Th	1545
$H^+ + Li$	Ionization	2 MeV	Th	1545
$H^+ + Be$	Ionization	2 MeV	Th	1545
$H^+ + CO$	Ionization	10^2-1.5×10^4 keV/amu	Th	1550
$H^+ + N_2$	Ionization	10^2-1.5×10^4 keV/amu	Th	1550
$H^+ + O_2$	Ionization	10^2-1.5×10^4 keV/amu	Th	1550
$H^+ + He$	Ionization	6 MeV	E/T	1554
$H^+ + He$	Ionization	100−200 keV	Th	1560
$H^* + H_2$	De-excitation	2−200 keV	E/T	1564
$H + H$	Excitation	2−200 keV	E/T	1564
$H^+ + He$	Total Scattering	6 MeV	Th	1566
$H^+ + He$	Ionization	6 MeV	Th	1566
$H^+ + C$	Ionization	0.5−5000 MeV	Th	1567
$H^+ + Na$	Ionization	0.5−5000 MeV	Th	1567
$H^+ + Al$	Ionization	0.5−5000 MeV	Th	1567
$H^+ + Ca$	Ionization	0.5−5000 MeV	Th	1567

$\mathbf{H^+ + Ti}$	Ionization	0.5−5000 MeV	Th	1567
$\mathbf{H^+ + Fe}$	Ionization	0.5−5000 MeV	Th	1567
$\mathbf{H^+ + Ni}$	Ionization	0.5−5000 MeV	Th	1567
$\mathbf{H^+ + Cu}$	Ionization	0.5−5000 MeV	Th	1567
$\mathbf{H^+ + Kr}$	Ionization	0.5−5000 MeV	Th	1567
$\mathbf{H^+ + Mo}$	Ionization	0.5−5000 MeV	Th	1567
$\mathbf{H^+ + Ag}$	Ionization	0.5−5000 MeV	Th	1567
$\mathbf{H^+ + Sn}$	Ionization	0.5−5000 MeV	Th	1567
$\mathbf{H^+ + La}$	Ionization	0.5−5000 MeV	Th	1567
$\mathbf{H^+ + Nd}$	Ionization	0.5−5000 MeV	Th	1567
$\mathbf{H^+ + Hf}$	Ionization	0.5−5000 MeV	Th	1567
$\mathbf{H^+ + Au}$	Ionization	0.5−5000 MeV	Th	1567
$\mathbf{H^+ + U}$	Ionization	0.5−5000 MeV	Th	1567
$\mathbf{H^+ + A}$	Ionization	0.5−5000 MeV	Th	1567
$\mathbf{H + CO^+}$	Excitation	0−300 eV	Th	1574
$\mathbf{H^+ + O}$	Charge Transfer	0.5−200 keV	Th	1578
$\mathbf{H^+ + O}$	Total Scattering	0.5−200 keV	Th	1578
$\mathbf{H + O_2}$	Interchange reaction	0.8−1.8 eV	Th	1582
$\mathbf{H + H_2}$	Interchange reaction	1.48−1.94 eV	Exp	1587
$\mathbf{H + D_2}$	Interchange reaction	1.48−1.94 eV	Exp	1587
$\mathbf{H + H_2}$	Total Scattering	1.48−1.94 eV	Exp	1587
$\mathbf{H + D_2}$	Total Scattering	1.48−1.94 eV	Exp	1587
$\mathbf{H^+ + H_2}$	Charge Transfer	20 eV	Th	1593
$\mathbf{H^+ + H_2}$	Energy Transfer	20 eV	Th	1593
$\mathbf{H + CH_4}$	Interchange reaction	250−500 K	Th	1594
$\mathbf{H^+ + H_2}$	Interchange reaction	0.1−0.5 eV	Th	1597
$\mathbf{H^+ + D_2}$	Interchange reaction	0.1−0.5 eV	Th	1597
$\mathbf{H^+ + H_2}$	Elastic Scattering	4.7−10.0 eV	Th	1599
$\mathbf{H^+ + H_2}$	Charge Transfer	4.7−10.0 eV	Th	1599
$\mathbf{H^+ + H_2}$	Energy Transfer	4.7−10.0 eV	Th	1599
$\mathbf{H^+ + NO}$	Charge Transfer	9.5−29.03 eV	Th	1602
$\mathbf{H^+ + NO}$	Excitation	9.5−29.03 eV	Th	1602
$\mathbf{H^+ + O_2}$	Interaction Potentials	9.5 eV	Th	1605
$\mathbf{H^+ + O_2}$	Excitation	9.5 eV	Th	1605
$\mathbf{H + CH_4}$	Interchange reaction	0.0−2.5 eV	Th	1606
$\mathbf{H + CD_4}$	Interchange reaction	0.0−2.5 eV	Th	1606
$\mathbf{H + C_2H_6}$	Interchange reaction	0.0−2.5 eV	Th	1606
$\mathbf{H + C_2D_6}$	Interchange reaction	0.0−2.5 eV	Th	1606
$\mathbf{H + O_2}$	Interchange reaction	0.0−5000 eV	Th	1609
$\mathbf{H + O_2}$	Interchange reaction	0−1.5 eV	Th	1612
$\mathbf{H + NH_3}$	Interchange reaction	0−1.25 eV	Th	1617
$\mathbf{H^+ + N_2}$	Ionization	0.1−10 MeV	Th	1623
$\mathbf{H^+ + W}$	Excitation	0.4−2.0 MeV	Exp	1624
$\mathbf{H^+ + W}$	Ionization	0.4−2.0 MeV	Exp	1624
$\mathbf{H^+ + Gd}$	Excitation	75−300 keV	Exp	1627
$\mathbf{H^+ + Tb}$	Excitation	75−300 keV	Exp	1627
$\mathbf{H^+ + Dy}$	Excitation	75−300 keV	Exp	1627
$\mathbf{H^+ + Ho}$	Excitation	75−300 keV	Exp	1627
$\mathbf{H^+ + Er}$	Excitation	75−300 keV	Exp	1627
$\mathbf{H^+ + Tm}$	Excitation	75−300 keV	Exp	1627
$\mathbf{H^+ + Yb}$	Excitation	75−300 keV	Exp	1627
$\mathbf{H^+ + Gd}$	Ionization	75−300 keV	Exp	1627
$\mathbf{H^+ + Tb}$	Ionization	75−300 keV	Exp	1627
$\mathbf{H^+ + Dy}$	Ionization	75−300 keV	Exp	1627
$\mathbf{H^+ + Ho}$	Ionization	75−300 keV	Exp	1627
$\mathbf{H^+ + Er}$	Ionization	75−300 keV	Exp	1627
$\mathbf{H^+ + Tm}$	Ionization	75−300 keV	Exp	1627

H^+ + Yb	Ionization	75−300 keV	Exp	1627
H^+ + He	Charge Transfer	0.5 MeV	Th	1631
H^+ + He	Ionization	0.5 MeV	Th	1631
H^+ + H_2	Ionization	1−60 MeV/u	Exp	1632
H^+ + H	Elastic Scattering	1.9−3.0 MeV	Exp	1635
H^+ + D	Elastic Scattering	1.9−3.0 MeV	Exp	1635
H^+ + H	Total Scattering	1.9−3.0 MeV	Exp	1635
H^+ + D	Total Scattering	1.9−3.0 MeV	Exp	1635
H^+ + Al	Elastic Scattering	2.4−5.0 MeV	E/T	1636
H^+ + Al	Total Scattering	2.4−5.0 MeV	E/T	1636
H^+ + H_2O	Ionization	0.3−10 MeV/amu	Th	1638
H^+ + He	Charge Transfer		Th	1639
H^+ + He	Ionization		Th	1639
H^+ + Mg	Elastic Scattering	500−2500 keV	Th	1642
H^+ + Mg	Total Scattering	500−2500 keV	Th	1642
H^+ + H	Elastic Scattering	1.4−3.4 MeV	Exp	1645
H^+ + T	Elastic Scattering	1.4−3.4 MeV	Exp	1645
H^+ + H	Total Scattering	1.4−3.4 MeV	Exp	1645
H^+ + T	Total Scattering	1.4−3.4 MeV	Exp	1645
H^+ + Be	Heavy Particle Collisions	2−4 MeV	Exp	1647
H^+ + C	Heavy Particle Collisions	2−4 MeV	Exp	1647
H^+ + N	Elastic Scattering	0.7−3.5 MeV	Th	1648
H^+ + N	Total Scattering	0.7−3.5 MeV	Th	1648
H^+ + W	Excitation	260−400 keV	Exp	1649
H^+ + W	Ionization	260−400 keV	Exp	1649
H^+ + Au	Excitation	1−2.5 MeV	Exp	1650
H^+ + Pb	Excitation	1−2.5 MeV	Exp	1650
H^+ + Au	Ionization	1−2.5 MeV	Exp	1650
H^+ + Pb	Ionization	1−2.5 MeV	Exp	1650
H^+ + H	Excitation	20−1000 keV/amu	Th	1651
H^- + H^+	Charge Transfer	0.5−12 keV	E/T	1655
H^+ + H_2	Total Scattering	6 MeV	Th	1657
H^+ + H_2	Ionization	6 MeV	Th	1657
H^+ + Li	Excitation	10^0-10^3 keV	E/T	1661
H^+ + Na	Excitation	10^0-10^3 keV	E/T	1661
H^+ + K	Excitation	10^0-10^3 keV	E/T	1661
H^+ + Li	Ionization	10^0-10^3 keV	E/T	1661
H^+ + Na	Ionization	10^0-10^3 keV	E/T	1661
H^+ + K	Ionization	10^0-10^3 keV	E/T	1661
H^+ + Li	Charge Transfer	25−2500 eV/u	Th	1665
H^+ + Li	Excitation	25−2500 eV/u	Th	1665
H^+ + H_2	Charge Transfer	0.0003−62.5 eV/u	Th	1666
H^+ + He	Charge Transfer	5−200 eV	Th	1668
H^+ + He	Total Scattering	5−200 eV	Th	1668
H^+ + He	Excitation	5−200 eV	Th	1668
H^+ + H	Excitation	40 keV	Th	1670
H^+ + He	Ionization	1−10 v(a.u.)	E/T	1672
H^+ + U^{89+}	Excitation	0−600 MeV/u	Th	1678
H^+ + U^{90+}	Excitation	0−600 MeV/u	Th	1678
H^+ + Ce	Excitation	3−4 MeV	Exp	1684
H^+ + Nd	Excitation	3−4 MeV	Exp	1684
H^+ + Gd	Excitation	3−4 MeV	Exp	1684
H^+ + Dy	Excitation	3−4 MeV	Exp	1684
H^+ + Ho	Excitation	3−4 MeV	Exp	1684
H^+ + H^-	Charge Transfer	1−100 keV/u	Th	1692
H + Xe	Ionization	0.1−6.5 MeV/amu	Th	1694
H^+ + Li	Ionization	0.1−6.5 MeV/amu	Th	1694

$H^+ + Ar$	Ionization	0.1−6.5 MeV/amu	Th	1694
$H + H$	Interaction Potentials		Th	1698
$H^+ + N$	Interaction Potentials	R=0−6 a.u.	Th	1700
$H + H$	Interaction Potentials	R=3−600 a.u.	Th	1701
$H^+ + H_2$	Ionization	0.095−1 MeV/amu	Th	1702
$H^+ + Be$	Charge Transfer	$2.5 + 10^{-7}$-16 keV/amu	Th	1703
$H^+ + Be$	Excitation	$2.5 + 10^{-7}$-16 keV/amu	Th	1703
$H + H$	Interaction Potentials		Th	1710
$H + H_2$	Interaction Potentials		Th	1710
$H^+ + C_4H_5N_3O$	Total Scattering	0.1−100 MeV	Th	1713
$H^+ + C_4H_5N_3O$	Ionization	0.1−100 MeV	Th	1713
$H^+ + Na$	Charge Transfer	1-10^7 eV	E/T	1720
$H^+ + Na$	Excitation	1-10^7 eV	E/T	1720
$H^+ + Na$	Ionization	1-10^7 eV	E/T	1720
$H + H$	Line Broadening	10,000 K	Th	1725
$H^+ + H$	Line Broadening	10,000 K	Th	1725
$H + H_2$	Excitation	1.72 eV	Th	1729
$H + D_2$	Excitation	1.72 eV	Th	1729
$H + H_2$	Interchange reaction	0.0−3.0 eV	Th	1733
$H^+ + H_2$	Interchange reaction	0.0−1.2 eV	Th	1734
$H^+ + D_2$	Interchange reaction	0.0−1.2 eV	Th	1734
$H + CH_4$	Interchange reaction	0−5000 K	Th	1738
$H^+ + H_2$	Interchange reaction	0.1−0.5 eV	Th	1739
$H^+ + D_2$	Interchange reaction	0.1−0.5 eV	Th	1739
$H^+ + H$	Charge Transfer	0.02−100 MeV	Th	1741
$H^+ + He$	Charge Transfer	0.02−100 MeV	Th	1741
$H^+ + H$	Ionization	0.02−100 MeV	Th	1741
$H^+ + He$	Ionization	0.02−100 MeV	Th	1741
$H^+ + He$	Excitation	50−500 keV	Th	1742
$H^+ + C$	Ionization	0−2.5 MeV	Th	1743
$H^+ + Si$	Ionization	0−2.5 MeV	Th	1743
$H^+ + Cu$	Ionization	0−2.5 MeV	Th	1743
$H^+ + Y$	Ionization	0−2.5 MeV	Th	1743
$H^+ + Cd$	Ionization	0−2.5 MeV	Th	1743
$H^+ + Sb$	Ionization	0−2.5 MeV	Th	1743
$H^+ + Te$	Ionization	0−2.5 MeV	Th	1743
$H^+ + Dy$	Ionization	0−2.5 MeV	Th	1743
$H^+ + Ta$	Ionization	0−2.5 MeV	Th	1743
$H^+ + Re$	Ionization	0−2.5 MeV	Th	1743
$H^+ + Th$	Ionization	0−2.5 MeV	Th	1743
$H^+ + He$	Ionization	75-10^5 keV/amu	Exp	1745
$H^+ + H_2$	Ionization	1−60 MeV	E/T	1747
$H^+ + N_2$	Ionization	1−60 MeV	E/T	1747
$H^+ + H$	Charge Transfer		Th	1750
$H^+ + H$	Ionization		Th	1750
$H^+ + H$	Total Scattering	75 keV	E/T	1755
$H^+ + He$	Total Scattering	75 keV	E/T	1755
$H^+ + H_2$	Total Scattering	75 keV	E/T	1755
$H^+ + H$	Ionization	75 keV	E/T	1755
$H^+ + He$	Ionization	75 keV	E/T	1755
$H^+ + H_2$	Ionization	75 keV	E/T	1755
$H^+ + Ar$	Charge Transfer	3−100 keV	E/T	1760
$H^+ + Ar$	Total Scattering	3−100 keV	E/T	1760
$H^+ + He$	Elastic Scattering	1.6−3.6 MeV	E/T	1762
$H^+ + He$	Total Scattering	1.6−3.6 MeV	E/T	1762
$H^+ + He$	Charge Transfer	10^{-1}-10 MeV	Exp	1764
$H^+ + H_2O$	Charge Transfer	10^{-1}-10 MeV	Exp	1764

H^+ + He	Total Scattering	10^{-1}-10 MeV	Exp	1764
H^+ + H_2O	Total Scattering	10^{-1}-10 MeV	Exp	1764
H^+ + H_2O	Total Scattering	0.15−72 MeV	Th	1765
H^+ + H_2O	Ionization	0.15−72 MeV	Th	1765
H^+ + H	Elastic Scattering	1.8−3.2 MeV	Exp	1769
H^+ + H	Total Scattering	1.8−3.2 MeV	Exp	1769
H^+ + H	Charge Transfer	1−400 keV	Th	1775
H^+ + H	Excitation	1−400 keV	Th	1775
H^+ + He	Charge Transfer	2−6 MeV	Th	1776
H^+ + He	Total Scattering	2−6 MeV	Th	1776
H^+ + He	Ionization	2−6 MeV	Th	1776
H + Li	Charge Transfer	0.001−100 keV	Th	1782
H^+ + Li	Charge Transfer	0.001−100 keV	Th	1782
H + Li	Ionization	0.001−100 keV	Th	1782
H^+ + Li	Ionization	0.001−100 keV	Th	1782
H^+ + CH_3	Charge Transfer	50−10,000 eV	Th	1783
H^+ + CH_3	Excitation	50−10,000 eV	Th	1783
H^+ + N_2	Ionization	1−5 MeV/u	E/T	1784
H^+ + He	Charge Transfer	630 keV	Th	1785
H^+ + He	Total Scattering	630 keV	Th	1785
H^+ + He	Ionization	630 keV	Th	1785
He + CS	Line Broadening	300−1500 K	Th	1441
He + CS	De-excitation	300−1500 K	Th	1441
He + Li	Line Broadening	70−3000 K	Th	1445
He + Na	Line Broadening	70−3000 K	Th	1445
He + K	Line Broadening	70−3000 K	Th	1445
He + Li	Interaction Potentials	70−3000 K	Th	1445
He + Na	Interaction Potentials	70−3000 K	Th	1445
He + K	Interaction Potentials	70−3000 K	Th	1445
He^{2+} + He	Ionization	1−1.6 MeV/amu	Th	1447
He + He	Ionization	10^{-6}-10^{-3} K	Th	1458
He + He^*	Ionization	10^{-6}-10^{-3} K	Th	1458
He^* + He^*	Ionization	10^{-6}-10^{-3} K	Th	1458
He^{2+} + Li^{2+}	Charge Transfer	0.5−4.0 a.u.	Th	1464
He + K	De-excitation	360−480 K	E/T	1475
He + Rb	De-excitation	360−480 K	E/T	1475
He^{2+} + C	Ionization	0.03−10 MeV/u	Th	1478
He^{2+} + C^+	Ionization	0.03−10 MeV/u	Th	1478
He^{2+} + C^{2+}	Ionization	0.03−10 MeV/u	Th	1478
He^{2+} + C^{3+}	Ionization	0.03−10 MeV/u	Th	1478
He^{2+} + C^{4+}	Ionization	0.03−10 MeV/u	Th	1478
He^{2+} + C^{5+}	Ionization	0.03−10 MeV/u	Th	1478
He + He + He	Association	1 mK	Th	1486
He + He_2	Association	1 mK	Th	1486
He + N_2	Association	10−500 meV	E/T	1488
He^* + N_2	Association	10−500 meV	E/T	1488
He + N_2	Ionization	10−500 meV	E/T	1488
He^* + N_2	Ionization	10−500 meV	E/T	1488
He + Y	Elastic Scattering		Th	1490
He + La	Elastic Scattering		Th	1490
He + Ce	Elastic Scattering		Th	1490
He + Pr	Elastic Scattering		Th	1490
He + Nd	Elastic Scattering		Th	1490
He + Pm	Elastic Scattering		Th	1490
He + Sm	Elastic Scattering		Th	1490
He + Eu	Elastic Scattering		Th	1490
He + Gd	Elastic Scattering		Th	1490

He + Tb	Elastic Scattering		Th	1490
He + Dy	Elastic Scattering		Th	1490
He + Ho	Elastic Scattering		Th	1490
He + Er	Elastic Scattering		Th	1490
He + Tm	Elastic Scattering		Th	1490
He + Yb	Elastic Scattering		Th	1490
He + Lu	Elastic Scattering		Th	1490
He + Y	Interaction Potentials		Th	1490
He + La	Interaction Potentials		Th	1490
He + Ce	Interaction Potentials		Th	1490
He + Pr	Interaction Potentials		Th	1490
He + Nd	Interaction Potentials		Th	1490
He + Pm	Interaction Potentials		Th	1490
He + Sm	Interaction Potentials		Th	1490
He + Eu	Interaction Potentials		Th	1490
He + Gd	Interaction Potentials		Th	1490
He + Tb	Interaction Potentials		Th	1490
He + Dy	Interaction Potentials		Th	1490
He + Ho	Interaction Potentials		Th	1490
He + Er	Interaction Potentials		Th	1490
He + Tm	Interaction Potentials		Th	1490
He + Yb	Interaction Potentials		Th	1490
He + Lu	Interaction Potentials		Th	1490
$\mathbf{He^{2+} + H_2O}$	Total Scattering	50−10,000 keV/u	E/T	1491
$\mathbf{He^{2+} + H_2O}$	Ionization	50−10,000 keV/u	E/T	1491
He + He	Association	5−20 mW/cm^2	Exp	1493
He + YbF	Elastic Scattering	10^{-3}-1 K	Th	1494
He + YbF	Excitation	10^{-3}-1 K	Th	1494
$\mathbf{He^{2+} + H_2}$	Charge Transfer	0.0035−2 keV/amu	Exp	1498
$\mathbf{He^{2+} + D_2}$	Charge Transfer	0.0035−2 keV/amu	Exp	1498
$\mathbf{He^{2+} + O_2}$	Charge Transfer	0.0035−2 keV/amu	Exp	1498
$\mathbf{He^{+} + H_2O}$	Dissociation	0−10 keV/amu	E/T	1502
$\mathbf{He^{2+} + H_2O}$	Dissociation	0−10 keV/amu	E/T	1502
$\mathbf{He^{+} + H_2O}$	Charge Transfer	0−10 keV/amu	E/T	1502
$\mathbf{He^{2+} + H_2O}$	Charge Transfer	0−10 keV/amu	E/T	1502
$\mathbf{He^{+} + H}$	Charge Transfer	50−5000 keV	E/T	1505
$\mathbf{He^{+} + He}$	Charge Transfer	50−5000 keV	E/T	1505
He + He	Association	1−10,000 μ K	Th	1510
He + He	Association	0.01−100 mK	E/T	1511
$\mathbf{He^{*} + He}$	Association	0.01−100 mK	E/T	1511
$\mathbf{He^{*} + He^{*}}$	Association	0.01−100 mK	E/T	1511
He + He	Ionization	0.01−100 mK	E/T	1511
$\mathbf{He^{*} + He}$	Ionization	0.01−100 mK	E/T	1511
$\mathbf{He^{*} + He^{*}}$	Ionization	0.01−100 mK	E/T	1511
He + He	Interaction Potentials		Th	1517
$\mathbf{He^{*} + He}$	Interaction Potentials		Th	1517
$\mathbf{He^{*} + He^{*}}$	Interaction Potentials		Th	1517
$\mathbf{He + H_2}$	Dissociation	100-10^5 cm^{-1}	Th	1533
He + He	Interaction Potentials		Th	1534
He + Ne	Interaction Potentials		Th	1534
He + Ar	Interaction Potentials		Th	1534
He + Kr	Interaction Potentials		Th	1534
$\mathbf{He^{2+} + H}$	Charge Transfer	0.003−38.4 MeV	Th	1537
$\mathbf{He^{2+} + H}$	Excitation	0.003−38.4 MeV	Th	1537
$\mathbf{He^{2+} + H}$	Ionization	0.003−38.4 MeV	Th	1537
$\mathbf{He + He^{*}}$	Association		Th	1538
$\mathbf{He^{*} + He^{*}}$	Association		Th	1538

He + He*	Ionization		Th	1538
He* + He*	Ionization		Th	1538
He + He	Ionization	100−500 keV/u	Exp	1539
He^{2+} + H	Charge Transfer	5−300 keV/amu	Th	1549
He^{2+} + H	Interaction Potentials	5−300 keV/amu	Th	1549
He^{2+} + H	Excitation	5−300 keV/amu	Th	1549
He + He	Fluorescence	17 eV	Exp	1563
He + He	Ionization	17 eV	Exp	1563
He + SiS	Excitation	0−1500 cm^{-1}	Th	1572
He + NO	Excitation	0.1 eV	Th	1580
He + H$_2$	Excitation	0−300 K	E/T	1610
He^{2+} + Zr	Ionization	0−6000 keV	Th	1626
He^{2+} + Dy	Ionization	0−6000 keV	Th	1626
He^{2+} + U	Ionization	0−6000 keV	Th	1626
He$^+$ + N$_2$	Dissociation	0.19−0.87 MeV/amu	Exp	1630
He$^+$ + N$_2$	Ionization	0.19−0.87 MeV/amu	Exp	1630
He^{2+} + O	Elastic Scattering		Th	1634
He^{2+} + O	Total Scattering		Th	1634
He + Ag	Elastic Scattering	5−25 keV	Exp	1637
He + Ag	Interaction Potentials	5−25 keV	Exp	1637
He^{2+} + H$_2$O	Ionization	0.3−10 MeV/amu	Th	1638
He$^+$ + He	Charge Transfer		Th	1639
He^{2+} + He	Charge Transfer		Th	1639
He$^+$ + He	Ionization		Th	1639
He^{2+} + He	Ionization		Th	1639
He$^+$ + C	Charge Transfer	420 MeV	Exp	1641
He$^+$ + Mg	Charge Transfer	420 MeV	Exp	1641
He$^+$ + Ni	Charge Transfer	420 MeV	Exp	1641
He$^+$ + Zr	Charge Transfer	420 MeV	Exp	1641
He$^+$ + Sn	Charge Transfer	420 MeV	Exp	1641
He$^+$ + Pb	Charge Transfer	420 MeV	Exp	1641
He$^+$ + C	Ionization	420 MeV	Exp	1641
He$^+$ + Mg	Ionization	420 MeV	Exp	1641
He$^+$ + Ni	Ionization	420 MeV	Exp	1641
He$^+$ + Zr	Ionization	420 MeV	Exp	1641
He$^+$ + Sn	Ionization	420 MeV	Exp	1641
He$^+$ + Pb	Ionization	420 MeV	Exp	1641
He$^+$ + Au	Ionization	1−100 keV	Th	1643
He$^+$ + He	Charge Transfer	10^1-10^4 keV/amu	Th	1646
He^{2+} + He	Charge Transfer	10^1-10^4 keV/amu	Th	1646
He$^+$ + He	Ionization	10^1-10^4 keV/amu	Th	1646
He^{2+} + He	Ionization	10^1-10^4 keV/amu	Th	1646
He^{2+} + H	Excitation	20−1000 keV/amu	Th	1651
He^{2+} + H	Charge Transfer	30−1000 eV/amu	Th	1653
He^{2+} + D	Charge Transfer	30−1000 eV/amu	Th	1653
He^{2+} + T	Charge Transfer	30−1000 eV/amu	Th	1653
He + He	Total Scattering	100 keV	Exp	1656
He + He	Ionization	100 keV	Exp	1656
He$^+$ + H$_2$O	Dissociation	0.5−2 MeV	Exp	1660
He$^+$ + H$_2$O	Charge Transfer	0.5−2 MeV	Exp	1660
He$^+$ + H$_2$O	Ionization	0.5−2 MeV	Exp	1660
He^{2+} + He	Ionization	1−10 v(a.u.)	E/T	1672
He^{2+} + H	Ionization	1−280 keV/u	Th	1673
He^{2+} + N$_2$	Fluorescence	4.3 MeV; 250−300 deg K	Exp	1681
He^{2+} + He	Charge Transfer	100 keV	Exp	1688
He^{2+} + H$_2$	Charge Transfer	100 keV	Exp	1688
He^{2+} + He	Ionization	100 keV	Exp	1688

He^{2+} + H_2	Ionization	100 keV	Exp	1688
He + SiS	Excitation	300−1500 K	Th	1693
He + He	Interaction Potentials	2−6 $\AA$	Th	1695
He^{+} + O_2	Dissociation	0.75−3.5 MeV	Exp	1699
He^{+} + O_2	Ionization	0.75−3.5 MeV	Exp	1699
He^{+} + H	Ionization	20−500 keV/amu	Th	1712
He^{2+} + He	Charge Transfer	0.2−20 MeV	Th	1715
He^{2+} + Na	Excitation	1-10^7 eV	E/T	1720
He + CH_4	Energy Transfer	10^{-7}-3000 cm^{-1}	Th	1728
He + CO_2	De-excitation	10^{-6}-10^4 cm^{-1}	Th	1732
He^{2+} + H	Charge Transfer	0.02−100 MeV	Th	1741
He^{2+} + He	Charge Transfer	0.02−100 MeV	Th	1741
He^{2+} + H	Ionization	0.02−100 MeV	Th	1741
He^{2+} + He	Ionization	0.02−100 MeV	Th	1741
He^{2+} + C	Ionization	0−2.5 MeV	Th	1743
He^{2+} + Si	Ionization	0−2.5 MeV	Th	1743
He^{2+} + Cu	Ionization	0−2.5 MeV	Th	1743
He^{2+} + Y	Ionization	0−2.5 MeV	Th	1743
He^{2+} + Cd	Ionization	0−2.5 MeV	Th	1743
He^{2+} + Sb	Ionization	0−2.5 MeV	Th	1743
He^{2+} + Te	Ionization	0−2.5 MeV	Th	1743
He^{2+} + Dy	Ionization	0−2.5 MeV	Th	1743
He^{2+} + Ta	Ionization	0−2.5 MeV	Th	1743
He^{2+} + Re	Ionization	0−2.5 MeV	Th	1743
He^{2+} + Th	Ionization	0−2.5 MeV	Th	1743
He^{2+} + H_2O	Dissociation	1−5 keV	Exp	1746
He^{2+} + H_2	Charge Transfer	8−105 keV	Exp	1748
He^{2+} + H_2	Ionization	8−105 keV	Exp	1748
He + He	Ionization	100 keV	E/T	1749
He + He_2	Elastic Scattering	10^{-3}-10 mK	Th	1756
He + He_2	Interaction Potentials	10^{-3}-10 mK	Th	1756
He^{2+} + H_2O	Total Scattering	0.15−72 MeV	Th	1765
He^{2+} + H_2O	Ionization	0.15−72 MeV	Th	1765
He^{+} + Pt	Excitation	2−3 MeV	Exp	1767
He^{+} + Bi	Excitation	2−3 MeV	Exp	1767
He^{+} + Pt	Ionization	2−3 MeV	Exp	1767
He^{+} + Bi	Ionization	2−3 MeV	Exp	1767
He^{2+} + H	Charge Transfer	1−1000 keV/u	Th	1774
He^{2+} + He	Charge Transfer	2−6 MeV	Th	1776
He^{2+} + He	Total Scattering	2−6 MeV	Th	1776
He^{2+} + He	Ionization	2−6 MeV	Th	1776
He^{2+} + O	Charge Transfer	64−500 eV	Exp	1779
He^{2+} + Ni	Charge Transfer	64−500 eV	Exp	1779
He^{2+} + NiO	Charge Transfer	64−500 eV	Exp	1779
Li + Ne	Line Broadening	883 K	E/T	1440
Li + Ar	Line Broadening	883 K	E/T	1440
Li + Kr	Line Broadening	883 K	E/T	1440
Li + Xe	Line Broadening	883 K	E/T	1440
Li^{*} + Ne	Line Broadening	883 K	E/T	1440
Li^{*} + Ar	Line Broadening	883 K	E/T	1440
Li^{*} + Kr	Line Broadening	883 K	E/T	1440
Li^{*} + Xe	Line Broadening	883 K	E/T	1440
Li + Ne	Interaction Potentials	883 K	E/T	1440
Li + Ar	Interaction Potentials	883 K	E/T	1440
Li + Kr	Interaction Potentials	883 K	E/T	1440
Li + Xe	Interaction Potentials	883 K	E/T	1440
Li^{*} + Ne	Interaction Potentials	883 K	E/T	1440

Li^* + Ar	Interaction Potentials	883 K	E/T	1440
Li^* + Kr	Interaction Potentials	883 K	E/T	1440
Li^* + Xe	Interaction Potentials	883 K	E/T	1440
Li + Cs	Elastic Scattering	10^{-7} cm^{-1}	Th	1484
Li + Cs	Interaction Potentials	$15.53-17.24\times10^3$ cm^{-1}	E/T	1497
Li + Li_2	De-excitation	10^{-9} K	Th	1501
Li + Li_2	Elastic Scattering	10^{-9} K	Th	1501
Li^{2+} + He	Charge Transfer	50−5000 keV	E/T	1505
Li + Cs	Association	0-10^{-5} a.u.	Th	1523
Li + Ne	Interaction Potentials		Th	1526
Li + Ar	Interaction Potentials		Th	1526
Li + Kr	Interaction Potentials		Th	1526
Li + Xe	Interaction Potentials		Th	1526
Li + He	Ionization	100−500 keV/u	Exp	1539
Li + Na	Ionization	700−1100 K	Exp	1561
Li^* + Na	Ionization	700−1100 K	Exp	1561
Li^{3+} + H	Charge Transfer	10-10^7 eV/u	E/T	1570
Li^{3+} + H^*	Charge Transfer	10-10^7 eV/u	E/T	1570
Li^{3+} + H	Excitation	10-10^7 eV/u	E/T	1570
Li^{3+} + H^*	Excitation	10-10^7 eV/u	E/T	1570
Li^{3+} + H	Ionization	10-10^7 eV/u	E/T	1570
Li^{3+} + H^*	Ionization	10-10^7 eV/u	E/T	1570
Li + Li_2	Excitation	0.0−1.0 K	Th	1583
Li^{3+} + He	Charge Transfer		Th	1639
Li^{3+} + He	Ionization		Th	1639
Li^+ + He	Charge Transfer	10^1-10^4 keV/amu	Th	1646
Li^{2+} + He	Charge Transfer	10^1-10^4 keV/amu	Th	1646
Li^{3+} + He	Charge Transfer	10^1-10^4 keV/amu	Th	1646
Li^+ + He	Ionization	10^1-10^4 keV/amu	Th	1646
Li^{2+} + He	Ionization	10^1-10^4 keV/amu	Th	1646
Li^{3+} + He	Ionization	10^1-10^4 keV/amu	Th	1646
Li^{3+} + H	Excitation	20−1000 keV/amu	Th	1651
Li^+ + H	Charge Transfer	25−2500 eV/u	Th	1665
Li^+ + H	Excitation	25−2500 eV/u	Th	1665
Li^{3+} + He	Ionization	1−10 v(a.u.)	E/T	1672
Li^+ + H_2	De-excitation	10^{-6}-10^{-1} cm^{-1}	Th	1676
Li^+ + D_2	De-excitation	10^{-6}-10^{-1} cm^{-1}	Th	1676
Li^+ + H_2	Elastic Scattering	10^{-6}-10^{-1} cm^{-1}	Th	1676
Li^+ + D_2	Elastic Scattering	10^{-6}-10^{-1} cm^{-1}	Th	1676
Li^+ + H_2	Excitation	10^{-6}-10^{-1} cm^{-1}	Th	1676
Li^+ + D_2	Excitation	10^{-6}-10^{-1} cm^{-1}	Th	1676
Li + H	Interaction Potentials		Th	1698
Li + Li	Interaction Potentials		Th	1704
Li + NH_3	Interaction Potentials		Th	1705
Li + Li	Interaction Potentials		Th	1706
Li^+ + H	Ionization	20−500 keV/amu	Th	1712
Li^{2+} + H	Ionization	20−500 keV/amu	Th	1712
Li^{3+} + He	Charge Transfer	0.2−20 MeV	Th	1715
Li^{3+} + H	Charge Transfer	0.02−100 MeV	Th	1741
Li^{3+} + He	Charge Transfer	0.02−100 MeV	Th	1741
Li^{3+} + H	Ionization	0.02−100 MeV	Th	1741
Li^{3+} + He	Ionization	0.02−100 MeV	Th	1741
Li + Na	Elastic Scattering	0−1200 G	Th	1778
Li + Li	Interaction Potentials	2−11 $\mathring{A}$	Exp	1780
Be + H_2	Interaction Potentials	0−6 a.u.	Th	1450
Be + Be	Interaction Potentials	3.5−30 bohr	Th	1463
Be^{4+} + H	Excitation	20−1000 keV/amu	Th	1651

Be + O	Interaction Potentials		Th	1697
Be + O^+	Interaction Potentials		Th	1697
Be + NH_3	Interaction Potentials		Th	1705
Be^{4+} + Na	Excitation	1-10^7 eV	E/T	1720
B^{5+} + H	Excitation	20−1000 keV/amu	Th	1651
B^- + He	Detachment	0.7−130 keV	Th	1658
B^- + Ar	Detachment	0.7−130 keV	Th	1658
B^+ + Ne	Detachment	0.7−130 keV	Th	1658
B^{5+} + He	Ionization	1−10 v(a.u.)	E/T	1672
B + H	Interaction Potentials		Th	1698
B^{5+} + He	Charge Transfer	0.2−20 MeV	Th	1715
C^{6+} + Al^{12+}	Charge Transfer	laser plasma	Exp	1442
C^{5+} + H_2O	Charge Transfer	1 keV/amu	E/T	1449
C^{6+} + H_2O	Charge Transfer	1 keV/amu	E/T	1449
C^{6+} + H	Total Scattering	400−643 MeV/u	Th	1455
C^{6+} + H	Ionization	400−643 MeV/u	Th	1455
C^{6+} + He	Total Scattering	100 MeV/u	Th	1465
C^{6+} + He	Ionization	100 MeV/u	Th	1465
C^{6+} + He	Total Scattering	100 MeV/u	Th	1467
C^{6+} + He	Ionization	100 MeV/u	Th	1467
C^+ + He	Ionization	25−500 keV/u	Exp	1469
C^{2+} + He	Ionization	25−500 keV/u	Exp	1469
C^{3+} + He	Ionization	25−500 keV/u	Exp	1469
C^{4+} + He	Charge Transfer	240−440 eV	E/T	1474
C^{3+} + CO	Charge Transfer		Exp	1483
C^{5+} + H_2O	Charge Transfer		Exp	1483
C^{5+} + CO	Charge Transfer		Exp	1483
C^{5+} + CO_2	Charge Transfer		Exp	1483
C^{6+} + CO	Charge Transfer		Exp	1483
C^{6+} + CO_2	Charge Transfer		Exp	1483
C^{6+} + He	Total Scattering	100 MeV	Th	1487
C^{6+} + He	Ionization	100 MeV	Th	1487
C^{6+} + H_2	Total Scattering	6 MeV/u	E/T	1504
C^{6+} + H_2	Ionization	6 MeV/u	E/T	1504
C^{6+} + He	Total Scattering	3.6−100 MeV/u	Th	1508
C^{6+} + He	Ionization	3.6−100 MeV/u	Th	1508
C^{6+} + H_2	Ionization	2.5−63 MeV/u	Th	1516
C^{6+} + He	Total Scattering	100 MeV/u	Exp	1527
C^{6+} + He	Ionization	100 MeV/u	Exp	1527
C + He	Ionization	100−500 keV/u	Exp	1539
C^{4+} + He	Charge Transfer	0.5−1 MeV/u	Exp	1541
C^{4+} + Ne	Charge Transfer	0.5−1 MeV/u	Exp	1541
C^{5+} + He	Charge Transfer	0.5−1 MeV/u	Exp	1541
C^{5+} + Ne	Charge Transfer	0.5−1 MeV/u	Exp	1541
C^{6+} + H_2O	Charge Transfer	0.1−100 keV/u	Th	1543
C^{6+} + CO	Dissociation	0.39−0.8 a.u.	Exp	1555
C^{3+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th	1575
C^{4+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th	1575
C^{5+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th	1575
C^{6+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th	1575
C^+ + H_2O	Association	300 K	Exp	1577
C^+ + CH_4	Association	300 K	Exp	1577
C^+ + NH_3	Association	300 K	Exp	1577
C^+ + O_2	Association	300 K	Exp	1577
C^+ + C_2H_2	Association	300 K	Exp	1577
C + OH	Interchange reaction	0.001−1.0 eV	Th	1608
C + H_2	Interchange reaction	150 MeV	Th	1619

$C^* + H_2$	Interchange reaction	150 MeV	Th	1619
$C^{4+} + H$	Charge Transfer	10^{-2}-10^3 eV/u	Exp	1625
$C^{4+} + D$	Charge Transfer	10^{-2}-10^3 eV/u	Exp	1625
$C^{6+} + H_2O$	Ionization	0.3−10 MeV/amu	Th	1638
$C^{2+} + He$	Charge Transfer		Th	1639
$C^{3+} + He$	Charge Transfer		Th	1639
$C^{2+} + He$	Ionization		Th	1639
$C^{3+} + He$	Ionization		Th	1639
$C^{+} + He$	Ionization	0.4−6.4 MeV	E/T	1640
$C^{2+} + He$	Ionization	0.4−6.4 MeV	E/T	1640
$C^{3+} + He$	Ionization	0.4−6.4 MeV	E/T	1640
$C^{4+} + He$	Ionization	0.4−6.4 MeV	E/T	1640
$C^{6+} + He$	Total Scattering	100 MeV/amu	Th	1644
$C^{6+} + He$	Ionization	100 MeV/amu	Th	1644
$C^{6+} + H$	Excitation	20−1000 keV/amu	Th	1651
$C^{+} + Si$	Recombination	900−2200 keV/atom	E/T	1662
$C^{-} + He$	Detachment	1−81 keV/u	E/T	1669
$C^{-} + Ne$	Detachment	1−81 keV/u	E/T	1669
$C^{-} + Ar$	Detachment	1−81 keV/u	E/T	1669
$C^{2+} + He$	Ionization	1−10 v(a.u.)	E/T	1672
$C^{3+} + He$	Ionization	1−10 v(a.u.)	E/T	1672
$C^{6+} + He$	Ionization	1−10 v(a.u.)	E/T	1672
$C^{+} + He$	Elastic Scattering	550−1500 K	Exp	1689
$C^{6+} + H_2$	Ionization	0.095−1 MeV/amu	Th	1702
C + O	Interaction Potentials		Th	1704
C + OH	Interchange reaction	0.05−1.0 eV	Th	1735
$C^{6+} + H$	Charge Transfer	0.02−100 MeV	Th	1741
$C^{6+} + He$	Charge Transfer	0.02−100 MeV	Th	1741
$C^{6+} + H$	Ionization	0.02−100 MeV	Th	1741
$C^{6+} + He$	Ionization	0.02−100 MeV	Th	1741
$C^{6+} + He$	Ionization	2 keV; 3.7 MeV/amu	Exp	1744
$C^{6+} + He$	Ionization	75-10^5 keV/amu	Exp	1745
$C^{6+} + He$	Ionization	100 MeV/amu	Th	1751
$C^{+} + C^{-}$	Association	0.01−10 eV	Exp	1758
$C^{+} + C^{-}$	Ionization	0.01−10 eV	Exp	1758
$C^{2+} + Ne$	Charge Transfer	80−400 keV/u	Exp	1761
$C^{3+} + Ne$	Charge Transfer	80−400 keV/u	Exp	1761
$C^{6+} + H_2O$	Ionization	6 MeV/u	Exp	1763
$C^{6+} + H_2O$	Total Scattering	0.15−72 MeV	Th	1765
$C^{6+} + H_2O$	Ionization	0.15−72 MeV	Th	1765
$C^{4+} + Ce$	Excitation	12−14 MeV	E/T	1768
$C^{4+} + Gd$	Excitation	12−14 MeV	E/T	1768
$C^{4+} + Dy$	Excitation	12−14 MeV	E/T	1768
$C^{4+} + Ho$	Excitation	12−14 MeV	E/T	1768
$C^{4+} + Er$	Excitation	12−14 MeV	E/T	1768
$C^{4+} + Ce$	Ionization	12−14 MeV	E/T	1768
$C^{4+} + Gd$	Ionization	12−14 MeV	E/T	1768
$C^{4+} + Dy$	Ionization	12−14 MeV	E/T	1768
$C^{4+} + Ho$	Ionization	12−14 MeV	E/T	1768
$C^{4+} + Er$	Ionization	12−14 MeV	E/T	1768
$C^{6+} + He$	Charge Transfer	2−6 MeV	Th	1776
$C^{6+} + He$	Total Scattering	2−6 MeV	Th	1776
$C^{6+} + He$	Ionization	2−6 MeV	Th	1776
$N^{6+} + H_2O$	Charge Transfer	1 keV/amu	E/T	1449
$N^{7+} + H_2O$	Charge Transfer	1 keV/amu	E/T	1449
$N^{3+} + H$	Charge Transfer	0−14 eV	Th	1453
$N^{4+} + CH_4$	Charge Transfer	1.8−3.5 keV/amu	Th	1575

N^{5+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th	1575
N^{6+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th	1575
N^{7+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th	1575
N + H_2	Interchange reaction	0.0−1.0 eV	Th	1592
N + H_2	Interchange reaction	0.0−1.0 eV	Th	1595
N + H_2	Interchange reaction	0−600 K	Th	1611
N + H_2	Interchange reaction	150 MeV	Th	1619
N^* + H_2	Interchange reaction	150 MeV	Th	1619
N^{2+} + H	Charge Transfer	10^{-2}-10^3 eV/u	Exp	1625
N^{2+} + D	Charge Transfer	10^{-2}-10^3 eV/u	Exp	1625
N^{4+} + H	Charge Transfer	10^{-2}-10^3 eV/u	Exp	1625
N^{4+} + D	Charge Transfer	10^{-2}-10^3 eV/u	Exp	1625
N^{2+} + He	Charge Transfer		Th	1639
N^{2+} + He	Ionization		Th	1639
N^{7+} + H	Excitation	20−1000 keV/amu	Th	1651
N + H_2	Interchange reaction	213−300 K	Th	1687
N^+ + H	Interaction Potentials	R=0−6 a.u.	Th	1700
N + H_2	Interchange reaction	150−300 K	Th	1740
N + HD	Interchange reaction	150−300 K	Th	1740
N^{6+} + H_2	Charge Transfer	8−105 keV	Exp	1748
N^{6+} + H_2	Ionization	8−105 keV	Exp	1748
N^{6+} + H_2O	Dissociation	30 keV	Exp	1753
N^{6+} + CH_4	Dissociation	30 keV	Exp	1753
N^+ + C^-	Association	0.01−10 eV	Exp	1758
N^+ + C^-	Ionization	0.01−10 eV	Exp	1758
N^+ + He	Excitation	14−21 MeV	Exp	1766
N^{2+} + He	Excitation	14−21 MeV	Exp	1766
N^{3+} + He	Excitation	14−21 MeV	Exp	1766
N^+ + He	Ionization	14−21 MeV	Exp	1766
N^{2+} + He	Ionization	14−21 MeV	Exp	1766
N^{3+} + He	Ionization	14−21 MeV	Exp	1766
O^{7+} + H_2O	Charge Transfer	1 keV/amu	E/T	1449
O^{8+} + H_2O	Charge Transfer	1 keV/amu	E/T	1449
O^- + H_2	Interaction Potentials		Th	1473
O^{5+} + CO	Charge Transfer		Exp	1483
O^{5+} + CO_2	Charge Transfer		Exp	1483
O^{6+} + H_2O	Charge Transfer		Exp	1483
O^{6+} + CO	Charge Transfer		Exp	1483
O^{6+} + CO_2	Charge Transfer		Exp	1483
O^{7+} + CO	Charge Transfer		Exp	1483
O^{7+} + CO_2	Charge Transfer		Exp	1483
O^{8+} + H_2O	Charge Transfer		Exp	1483
O^{8+} + CO	Charge Transfer		Exp	1483
O^{8+} + CO_2	Charge Transfer		Exp	1483
O^{4+} + C_{60}	Ionization	50 MeV	Exp	1495
O^{5+} + C_{60}	Ionization	50 MeV	Exp	1495
O^{6+} + C_{60}	Ionization	50 MeV	Exp	1495
O^{7+} + C_{60}	Ionization	50 MeV	Exp	1495
O^{8+} + C_{60}	Ionization	50 MeV	Exp	1495
O^{6+} + H_2O	Charge Transfer	0.1−7.5 keV/u	Exp	1525
O^+ + C_2H_4	Charge Transfer	0.018−4 keV/amu	E/T	1532
O + He	Ionization	100−500 keV/u	Exp	1539
O^{8+} + H_2O	Charge Transfer	0.1−100 keV/u	Th	1543
O^{5+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th	1575
O^{6+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th	1575
O^{7+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th	1575
O + OH	Interchange reaction	0.75 eV	Th	1596

O + OH	Interaction Potentials	0.75 eV	Th	1596
O + OH	Total Scattering	0.75 eV	Th	1596
O + HCl	Interchange reaction	0.0−1.0 eV	Th	1598
$\mathbf{O + H_2}$	Interchange reaction	150 MeV	Th	1619
$\mathbf{O^* + H_2}$	Interchange reaction	150 MeV	Th	1619
$\mathbf{O + H_2}$	Interchange reaction	0.0−0.15 eV	Th	1620
$\mathbf{O + H_2}$	Total Scattering	0.0−0.15 eV	Th	1620
$\mathbf{O^{5+} + He}$	Charge Transfer		Th	1639
$\mathbf{O^{5+} + He}$	Ionization		Th	1639
$\mathbf{O^{+} + He}$	Ionization	0.4−6.4 MeV	E/T	1640
$\mathbf{O^{2+} + He}$	Ionization	0.4−6.4 MeV	E/T	1640
$\mathbf{O^{3+} + He}$	Ionization	0.4−6.4 MeV	E/T	1640
$\mathbf{O^{4+} + He}$	Ionization	0.4−6.4 MeV	E/T	1640
$\mathbf{O^{8+} + H}$	Excitation	20−1000 keV/amu	Th	1651
$\mathbf{O^{-} + He}$	Detachment	0.7−130 keV	Th	1658
$\mathbf{O^{-} + Ne}$	Detachment	0.7−130 keV	Th	1658
$\mathbf{O^{-} + Ar}$	Detachment	0.7−130 keV	Th	1658
$\mathbf{O^{3+} + He}$	Charge Transfer	0.3−1.2 keV	Exp	1664
$\mathbf{O^{3+} + Ar}$	Charge Transfer	0.3−1.2 keV	Exp	1664
$\mathbf{O^{3+} + H_2O}$	Charge Transfer	0.3−1.2 keV	Exp	1664
$\mathbf{O^{3+} + D_2}$	Charge Transfer	0.3−1.2 keV	Exp	1664
$\mathbf{O^{3+} + CO_2}$	Charge Transfer	0.3−1.2 keV	Exp	1664
$\mathbf{O^{3+} + O_2}$	Charge Transfer	0.3−1.2 keV	Exp	1664
$\mathbf{O^{3+} + He}$	Interaction Potentials	0.3−1.2 keV	Exp	1664
$\mathbf{O^{3+} + Ar}$	Interaction Potentials	0.3−1.2 keV	Exp	1664
$\mathbf{O^{3+} + H_2O}$	Interaction Potentials	0.3−1.2 keV	Exp	1664
$\mathbf{O^{3+} + D_2}$	Interaction Potentials	0.3−1.2 keV	Exp	1664
$\mathbf{O^{3+} + CO_2}$	Interaction Potentials	0.3−1.2 keV	Exp	1664
$\mathbf{O^{3+} + O_2}$	Interaction Potentials	0.3−1.2 keV	Exp	1664
$\mathbf{O^{-} + He}$	Detachment	1−81 keV/u	E/T	1669
$\mathbf{O^{-} + Ne}$	Detachment	1−81 keV/u	E/T	1669
$\mathbf{O^{-} + Ar}$	Detachment	1−81 keV/u	E/T	1669
$\mathbf{O^{8+} + He}$	Ionization	1−10 v(a.u.)	E/T	1672
O + OH	Interchange reaction	100 K	Th	1686
$\mathbf{O^{8+} + H}$	Charge Transfer	0.02−100 MeV	Th	1741
$\mathbf{O^{8+} + He}$	Charge Transfer	0.02−100 MeV	Th	1741
$\mathbf{O^{8+} + H}$	Ionization	0.02−100 MeV	Th	1741
$\mathbf{O^{8+} + He}$	Ionization	0.02−100 MeV	Th	1741
$\mathbf{O^{7+} + H_2O}$	Dissociation	30 keV	Exp	1753
$\mathbf{O^{7+} + CH_4}$	Dissociation	30 keV	Exp	1753
$\mathbf{O^{5+} + O_2}$	Ionization	30 MeV	Exp	1754
$\mathbf{O^{8+} + O_2}$	Ionization	30 MeV	Exp	1754
$\mathbf{O^{+} + C^{-}}$	Association	0.01−10 eV	Exp	1758
$\mathbf{O^{+} + C^{-}}$	Ionization	0.01−10 eV	Exp	1758
$\mathbf{O^{2+} + Ne}$	Charge Transfer	80−400 keV/u	Exp	1761
$\mathbf{O^{3+} + Ne}$	Charge Transfer	80−400 keV/u	Exp	1761
$\mathbf{O^{5+} + Ce}$	Excitation	12−14 MeV	E/T	1768
$\mathbf{O^{5+} + Gd}$	Excitation	12−14 MeV	E/T	1768
$\mathbf{O^{5+} + Dy}$	Excitation	12−14 MeV	E/T	1768
$\mathbf{O^{5+} + Ho}$	Excitation	12−14 MeV	E/T	1768
$\mathbf{O^{5+} + Er}$	Excitation	12−14 MeV	E/T	1768
$\mathbf{O^{5+} + Ce}$	Ionization	12−14 MeV	E/T	1768
$\mathbf{O^{5+} + Gd}$	Ionization	12−14 MeV	E/T	1768
$\mathbf{O^{5+} + Dy}$	Ionization	12−14 MeV	E/T	1768
$\mathbf{O^{5+} + Ho}$	Ionization	12−14 MeV	E/T	1768
$\mathbf{O^{5+} + Er}$	Ionization	12−14 MeV	E/T	1768
$\mathbf{F^{4+} + He}$	Charge Transfer	0.5−2.5 MeV/u	Exp	1515

F^{5+} + He	Charge Transfer	0.5−2.5 MeV/u	Exp	1515
F^{6+} + He	Charge Transfer	0.5−2.5 MeV/u	Exp	1515
F^{7+} + He	Charge Transfer	0.5−2.5 MeV/u	Exp	1515
F^{8+} + He	Charge Transfer	0.5−2.5 MeV/u	Exp	1515
F^{9+} + He	Charge Transfer	0.5−2.5 MeV/u	Exp	1515
F^{4+} + He	Ionization	0.5−2.5 MeV/u	Exp	1515
F^{5+} + He	Ionization	0.5−2.5 MeV/u	Exp	1515
F^{6+} + He	Ionization	0.5−2.5 MeV/u	Exp	1515
F^{7+} + He	Ionization	0.5−2.5 MeV/u	Exp	1515
F^{8+} + He	Ionization	0.5−2.5 MeV/u	Exp	1515
F^{9+} + He	Ionization	0.5−2.5 MeV/u	Exp	1515
F + HCl	Interchange reaction	4.3 kcal/mol	Exp	1586
F + H_2	Interchange reaction	0.0−2.5 kcal/mol	Th	1590
F + H_2	Interaction Potentials	0.0−2.5 kcal/mol	Th	1590
F + H_2	Interchange reaction	0.0−2.5 kcal/mol	Th	1601
F + H_2	Interchange reaction	0−0.8 kcal/mol	Th	1613
F + HD	Interchange reaction	0−0.8 kcal/mol	Th	1613
F + H_2	Interaction Potentials	0−0.8 kcal/mol	Th	1613
F + HD	Interaction Potentials	0−0.8 kcal/mol	Th	1613
F + H_2	Interchange reaction	0.0−1.0 eV	Th	1614
F + D_2	Interchange reaction	0.0−1.0 eV	Th	1614
F + H_2	Interchange reaction	0.0−1.2 kcal/mol	Th	1615
F + HD	Interchange reaction	0.0−1.2 kcal/mol	Th	1615
F^- + He	Detachment	0.7−130 keV	Th	1658
F^- + Ne	Detachment	0.7−130 keV	Th	1658
F^- + Ar	Detachment	0.7−130 keV	Th	1658
F^{7+} + He	Charge Transfer	0.2−2 MeV/u	E/T	1659
F^{7+} + H_2	Charge Transfer	0.2−2 MeV/u	E/T	1659
F^- + He	Detachment	1−81 keV/u	E/T	1669
F^- + Ne	Detachment	1−81 keV/u	E/T	1669
F^- + Ar	Detachment	1−81 keV/u	E/T	1669
F^{9+} + He	Ionization	1−10 v(a.u.)	E/T	1672
F^{2+} + C_{60}	Dissociation	6.8 keV	Exp	1679
F^{2+} + C_{60}	Charge Transfer	6.8 keV	Exp	1679
F^{2+} + C_{60}	Ionization	6.8 keV	Exp	1679
F + CH_4	Interchange reaction	630 cm^{-1}	Th	1730
F^- + Ar	Elastic Scattering	10^{-3}-100 eV	Th	1752
F^- + Kr	Elastic Scattering	10^{-3}-100 eV	Th	1752
F^- + Xe	Elastic Scattering	10^{-3}-100 eV	Th	1752
F^- + Ar	Detachment	10^{-3}-100 eV	Th	1752
F^- + Kr	Detachment	10^{-3}-100 eV	Th	1752
F^- + Xe	Detachment	10^{-3}-100 eV	Th	1752
F + H_2O	Interchange reaction	25 kcal/mol	Exp	1772
Ne^{9+} + H_2O	Charge Transfer	1 keV/amu	E/T	1449
Ne^{10+} + H_2O	Charge Transfer	1 keV/amu	E/T	1449
Ne^{7+} + H_2O	Charge Transfer		Exp	1483
Ne^{7+} + CO	Charge Transfer		Exp	1483
Ne^{7+} + CO_2	Charge Transfer		Exp	1483
Ne^{+} + Ar	Charge Transfer	5−14 keV	Exp	1489
Ne^{2+} + Ar	Charge Transfer	5−14 keV	Exp	1489
Ne^{3+} + Ar	Charge Transfer	5−14 keV	Exp	1489
Ne^{4+} + Ar	Charge Transfer	5−14 keV	Exp	1489
Ne^{5+} + Ar	Charge Transfer	5−14 keV	Exp	1489
Ne^{7+} + Ar	Charge Transfer	5−14 keV	Exp	1489
Ne^{9+} + Ar	Charge Transfer	5−14 keV	Exp	1489
Ne^{+} + Ar	Ionization	5−14 keV	Exp	1489
Ne^{2+} + Ar	Ionization	5−14 keV	Exp	1489

Ne^{3+} + Ar	Ionization	5–14 keV	Exp	1489
Ne^{4+} + Ar	Ionization	5–14 keV	Exp	1489
Ne^{5+} + Ar	Ionization	5–14 keV	Exp	1489
Ne^{7+} + Ar	Ionization	5–14 keV	Exp	1489
Ne^{9+} + Ar	Ionization	5–14 keV	Exp	1489
Ne^{2+} + H	Charge Transfer	60–1000 eV/u	E/T	1507
Ne^{2+} + D	Charge Transfer	60–1000 eV/u	E/T	1507
Ne + Ne	Interaction Potentials		Th	1526
Ne + Ar	Interaction Potentials		Th	1526
Ne + Kr	Interaction Potentials		Th	1526
Ne + Xe	Interaction Potentials		Th	1526
Ne + He	Interaction Potentials		Th	1534
Ne + Ne	Interaction Potentials		Th	1534
Ne + Ar	Interaction Potentials		Th	1534
Ne + Kr	Interaction Potentials		Th	1534
Ne + He	Ionization	100–500 keV/u	Exp	1539
Ne^{10+} + H_2O	Charge Transfer	0.1–100 keV/u	Th	1543
Ne + In	Ionization	6–15 MeV/amu	Exp	1552
Ne + Sn	Ionization	6–15 MeV/amu	Exp	1552
Ne + Sm	Ionization	6–15 MeV/amu	Exp	1552
Ne + Tb	Ionization	6–15 MeV/amu	Exp	1552
Ne + Ho	Ionization	6–15 MeV/amu	Exp	1552
Ne + He	De-excitation	10–1000 K	E/T	1562
Ne^* + He	De-excitation	10–1000 K	E/T	1562
Ne + $H_2{}^+$	Interchange reaction	1.0 eV	Th	1607
Ne^{4+} + H	Charge Transfer	10^{-2}-10^3 eV/u	Exp	1625
Ne^{4+} + D	Charge Transfer	10^{-2}-10^3 eV/u	Exp	1625
Ne^{6+} + CO	Excitation	50–300 eV	Exp	1629
Ne^{7+} + CO	Excitation	50–300 eV	Exp	1629
Ne^{8+} + CO	Excitation	50–300 eV	Exp	1629
Ne + Ag	Elastic Scattering	5–25 keV	Exp	1637
Ne + Ag	Interaction Potentials	5–25 keV	Exp	1637
Ne + Ne	Interaction Potentials	2–6 $\AA$	Th	1695
Ne + He	Association	11–27 meV	Exp	1717
Ne + Ne	Association	11–27 meV	Exp	1717
Ne + Ar	Association	11–27 meV	Exp	1717
Ne + H_2	Association	11–27 meV	Exp	1717
Ne + N_2	Association	11–27 meV	Exp	1717
Ne + O_2	Association	11–27 meV	Exp	1717
Ne^* + He	Association	11–27 meV	Exp	1717
Ne^* + Ne	Association	11–27 meV	Exp	1717
Ne^* + Ar	Association	11–27 meV	Exp	1717
Ne^* + H_2	Association	11–27 meV	Exp	1717
Ne^* + N_2	Association	11–27 meV	Exp	1717
Ne^* + O_2	Association	11–27 meV	Exp	1717
Ne + He	Elastic Scattering	11–27 meV	Exp	1717
Ne + Ne	Elastic Scattering	11–27 meV	Exp	1717
Ne + Ar	Elastic Scattering	11–27 meV	Exp	1717
Ne + H_2	Elastic Scattering	11–27 meV	Exp	1717
Ne + N_2	Elastic Scattering	11–27 meV	Exp	1717
Ne + O_2	Elastic Scattering	11–27 meV	Exp	1717
Ne^* + He	Elastic Scattering	11–27 meV	Exp	1717
Ne^* + Ne	Elastic Scattering	11–27 meV	Exp	1717
Ne^* + Ar	Elastic Scattering	11–27 meV	Exp	1717
Ne^* + H_2	Elastic Scattering	11–27 meV	Exp	1717
Ne^* + N_2	Elastic Scattering	11–27 meV	Exp	1717
Ne^* + O_2	Elastic Scattering	11–27 meV	Exp	1717

Ne + He	Ionization	11−27 meV	Exp	1717
Ne + Ne	Ionization	11−27 meV	Exp	1717
Ne + Ar	Ionization	11−27 meV	Exp	1717
Ne + H_2	Ionization	11−27 meV	Exp	1717
Ne + N_2	Ionization	11−27 meV	Exp	1717
Ne + O_2	Ionization	11−27 meV	Exp	1717
Ne^* + He	Ionization	11−27 meV	Exp	1717
Ne^* + Ne	Ionization	11−27 meV	Exp	1717
Ne^* + Ar	Ionization	11−27 meV	Exp	1717
Ne^* + H_2	Ionization	11−27 meV	Exp	1717
Ne^* + N_2	Ionization	11−27 meV	Exp	1717
Ne^* + O_2	Ionization	11−27 meV	Exp	1717
Ne^+ + V	Fluorescence	15 MeV/u	Exp	1757
Ne^+ + V_2O_5	Fluorescence	15 MeV/u	Exp	1757
Ne^+ + VO	Fluorescence	15 MeV/u	Exp	1757
Ne^+ + V_2O_4	Fluorescence	15 MeV/u	Exp	1757
Na + Rb	Interaction Potentials	770−477 nm	E/T	1496
Na + Ne	Interaction Potentials		Th	1526
Na + Ar	Interaction Potentials		Th	1526
Na + Kr	Interaction Potentials		Th	1526
Na + Xe	Interaction Potentials		Th	1526
Na^- + He	Detachment	1−81 keV/u	E/T	1669
Na^- + Ne	Detachment	1−81 keV/u	E/T	1669
Na^- + Ar	Detachment	1−81 keV/u	E/T	1669
Na + Li	Interaction Potentials	R=3.25 − 100 a.u.	Th	1691
Na + NH_3	Interaction Potentials		Th	1705
Na + Na	Interaction Potentials		Th	1706
Na + He	De-excitation	0.001−10 eV	Th	1722
Na + He	Excitation	0.001−10 eV	Th	1722
Mg + NH_3	Interaction Potentials		Th	1705
Al^- + He	Detachment	0.7−130 keV	Th	1658
Al^- + Ne	Detachment	0.7−130 keV	Th	1658
Al^- + Ar	Detachment	0.7−130 keV	Th	1658
Si^{6+} + C_{60}	Ionization	2.33 MeV/u	Exp	1452
Si^{7+} + C_{60}	Ionization	2.33 MeV/u	Exp	1452
Si^{8+} + C_{60}	Ionization	2.33 MeV/u	Exp	1452
Si^{9+} + C_{60}	Ionization	2.33 MeV/u	Exp	1452
Si^{10+} + C_{60}	Ionization	2.33 MeV/u	Exp	1452
Si^{11+} + C_{60}	Ionization	2.33 MeV/u	Exp	1452
Si^{12+} + C_{60}	Ionization	2.33 MeV/u	Exp	1452
Si^{13+} + C_{60}	Ionization	2.33 MeV/u	Exp	1452
Si^{14+} + C_{60}	Ionization	2.33 MeV/u	Exp	1452
Si^{3+} + Au	Ionization	8.5−36 MeV	E/T	1548
Si^{3+} + Bi	Ionization	8.5−36 MeV	E/T	1548
Si^{3+} + Th	Ionization	8.5−36 MeV	E/T	1548
Si^{3+} + U	Ionization	8.5−36 MeV	E/T	1548
Si^{5+} + Au	Ionization	8.5−36 MeV	E/T	1548
Si^{5+} + Bi	Ionization	8.5−36 MeV	E/T	1548
Si^{5+} + Th	Ionization	8.5−36 MeV	E/T	1548
Si^{5+} + U	Ionization	8.5−36 MeV	E/T	1548
Si^{6+} + Au	Ionization	8.5−36 MeV	E/T	1548
Si^{6+} + Bi	Ionization	8.5−36 MeV	E/T	1548
Si^{6+} + Th	Ionization	8.5−36 MeV	E/T	1548
Si^{6+} + U	Ionization	8.5−36 MeV	E/T	1548
Si^{3+} + H	Charge Transfer	44−2444 eV/u	Exp	1556
Si^{4+} + H	Charge Transfer	10^{-2}-10^3 eV/u	Exp	1625
Si^{4+} + D	Charge Transfer	10^{-2}-10^3 eV/u	Exp	1625

Si^- + He	Detachment	1−81 keV/u	E/T	1669
Si^- + Ne	Detachment	1−81 keV/u	E/T	1669
Si^- + Ar	Detachment	1−81 keV/u	E/T	1669
S^{16+} + H_2O	Ionization	70−77 MeV/u	Th	1439
S + H_2	Interchange reaction	150 MeV	Th	1619
S^* + H_2	Interchange reaction	150 MeV	Th	1619
S^{9+} + CO	Excitation	50−300 eV	Exp	1629
S^+ + Au	Ionization	12.8−120 MeV	Exp	1652
S^+ + Bi	Ionization	12.8−120 MeV	Exp	1652
S^- + He	Detachment	0.7−130 keV	Th	1658
S^- + Ne	Detachment	0.7−130 keV	Th	1658
S^- + Ar	Detachment	0.7−130 keV	Th	1658
S^- + He	Detachment	1−81 keV/u	E/T	1669
S^- + Ne	Detachment	1−81 keV/u	E/T	1669
S^- + Ar	Detachment	1−81 keV/u	E/T	1669
Cl^{7+} + H	Charge Transfer	10^{-4}-1000 eV/u	Th	1521
Cl^- + He	Detachment	0.7−130 keV	Th	1658
Cl^- + Ne	Detachment	0.7−130 keV	Th	1658
Cl^- + Ar	Detachment	0.7−130 keV	Th	1658
Cl^- + He	Detachment	1−81 keV/u	E/T	1669
Cl^- + Ne	Detachment	1−81 keV/u	E/T	1669
Cl^- + Ar	Detachment	1−81 keV/u	E/T	1669
Ar^{18+} + H_2O	Ionization	70−77 MeV/u	Th	1439
Ar + CO_2	Excitation	300 K	E/T	1471
Ar^{18+} + C	Charge Transfer	13.6 MeV/u	E/T	1485
Ar^{8+} + CO	Dissociation	1.1 a.u.	Exp	1509
Ar^{8+} + CO	Ionization	1.1 a.u.	Exp	1509
Ar + Ar	Interaction Potentials		Th	1526
Ar + Kr	Interaction Potentials		Th	1526
Ar + Xe	Interaction Potentials		Th	1526
Ar + He	Interaction Potentials		Th	1534
Ar + Ne	Interaction Potentials		Th	1534
Ar + Ar	Interaction Potentials		Th	1534
Ar + Kr	Interaction Potentials		Th	1534
Ar^{8+} + C_2H_2	Dissociation	1.2 MeV	Exp	1542
Ar^{18+} + H_2O	Charge Transfer	0.1−100 keV/u	Th	1543
Ar + In	Ionization	6−15 MeV/amu	Exp	1552
Ar + Sn	Ionization	6−15 MeV/amu	Exp	1552
Ar + Sm	Ionization	6−15 MeV/amu	Exp	1552
Ar + Tb	Ionization	6−15 MeV/amu	Exp	1552
Ar + Ho	Ionization	6−15 MeV/amu	Exp	1552
Ar^{11+} + CO	Dissociation	0.39−0.8 a.u.	Exp	1555
Ar + Ar	De-excitation	5−25 meV	Exp	1557
Ar + Ar	Energy Transfer	5−25 meV	Exp	1557
Ar + Kr	Energy Transfer		Exp	1558
Ar^{2+} + Kr^+	Energy Transfer		Exp	1558
Ar^+ + Ar	Elastic Scattering	10^{-3}-10 eV	Th	1622
Ar^+ + Ar	Total Scattering	10^{-3}-10 eV	Th	1622
Ar + Ag	Elastic Scattering	5−25 keV	Exp	1637
Ar + Ag	Interaction Potentials	5−25 keV	Exp	1637
Ar^+ + CH_4	Dissociation	4.4 keV/u	Exp	1671
Ar^{2+} + CH_4	Dissociation	4.4 keV/u	Exp	1671
Ar^{3+} + CH_4	Dissociation	4.4 keV/u	Exp	1671
Ar^{4+} + CH_4	Dissociation	4.4 keV/u	Exp	1671
Ar^{5+} + CH_4	Dissociation	4.4 keV/u	Exp	1671
Ar^{6+} + CH_4	Dissociation	4.4 keV/u	Exp	1671
Ar^{7+} + CH_4	Dissociation	4.4 keV/u	Exp	1671

Ar^{17+} + CH_4	Charge Transfer	13.6 MeV/u	E/T	1674
Ar^{17+} + N_2	Charge Transfer	13.6 MeV/u	E/T	1674
Ar + Ar	Interaction Potentials	2−6 Å	Th	1695
Ar^{17+} + Ar	Charge Transfer	5−2000 eV/u	Exp	1707
Ar^{18+} + Ar	Charge Transfer	5−2000 eV/u	Exp	1707
Ar^{3+} + H	Charge Transfer	0.02−100 MeV	Th	1741
Ar^{3+} + He	Charge Transfer	0.02−100 MeV	Th	1741
Ar^{3+} + H	Ionization	0.02−100 MeV	Th	1741
Ar^{3+} + He	Ionization	0.02−100 MeV	Th	1741
Ar^{+} + V	Fluorescence	15 MeV/u	Exp	1757
Ar^{+} + V_2O_5	Fluorescence	15 MeV/u	Exp	1757
Ar^{+} + VO	Fluorescence	15 MeV/u	Exp	1757
Ar^{+} + V_2O_4	Fluorescence	15 MeV/u	Exp	1757
Ar^{+} + H	Ionization	1−35 MeV/amu	Th	1770
Ar^{+} + N	Ionization	1−35 MeV/amu	Th	1770
Ar^{+} + Ne	Ionization	1−35 MeV/amu	Th	1770
Ar^{+} + Ar	Ionization	1−35 MeV/amu	Th	1770
Ar^{+} + Kr	Ionization	1−35 MeV/amu	Th	1770
Ar^{+} + Xe	Ionization	1−35 MeV/amu	Th	1770
Ar^{+} + U	Ionization	1−35 MeV/amu	Th	1770
Ar^{2+} + H	Ionization	1−35 MeV/amu	Th	1770
Ar^{2+} + N	Ionization	1−35 MeV/amu	Th	1770
Ar^{2+} + Ne	Ionization	1−35 MeV/amu	Th	1770
Ar^{2+} + Ar	Ionization	1−35 MeV/amu	Th	1770
Ar^{2+} + Kr	Ionization	1−35 MeV/amu	Th	1770
Ar^{2+} + Xe	Ionization	1−35 MeV/amu	Th	1770
Ar^{2+} + U	Ionization	1−35 MeV/amu	Th	1770
Ar^{4+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{4+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{4+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{5+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{5+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{5+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{6+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{6+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{6+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{7+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{7+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{7+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{8+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{8+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{8+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{9+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{9+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{9+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{10+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{10+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{10+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{11+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{11+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{11+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{12+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{12+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{12+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{13+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{13+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{13+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773

Ar^{14+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{14+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{14+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{15+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{15+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{15+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{16+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{16+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{16+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{17+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{17+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{17+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{18+} + C_{60}	Charge Transfer	13−60 keV	Th	1773
Ar^{18+} + ${C_{60}}^{+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{18+} + ${C_{60}}^{2+}$	Charge Transfer	13−60 keV	Th	1773
Ar^{15+} + He	Charge Transfer	0.8−0.9 keV	E/T	1777
Ar^{16+} + He	Charge Transfer	0.8−0.9 keV	E/T	1777
Ar^{17+} + He	Charge Transfer	0.8−0.9 keV	E/T	1777
Ar^{18+} + He	Charge Transfer	0.8−0.9 keV	E/T	1777
Ar^{15+} + He	Total Scattering	0.8−0.9 keV	E/T	1777
Ar^{16+} + He	Total Scattering	0.8−0.9 keV	E/T	1777
Ar^{17+} + He	Total Scattering	0.8−0.9 keV	E/T	1777
Ar^{18+} + He	Total Scattering	0.8−0.9 keV	E/T	1777
K + He	Line Broadening	900 K	Exp	1456
K + Rb	Interaction Potentials		Exp	1518
K + Rb	Interaction Potentials		E/T	1519
K + Ne	Interaction Potentials		Th	1526
K + Ar	Interaction Potentials		Th	1526
K + Kr	Interaction Potentials		Th	1526
K + Xe	Interaction Potentials		Th	1526
K + HF	Interchange reaction	0.8−2.2 eV	Th	1604
K + NH_3	Interaction Potentials		Th	1705
K + K	Interaction Potentials		Th	1706
K^+ + He	Charge Transfer	1 MeV/u	Exp	1708
K^+ + Ne	Charge Transfer	1 MeV/u	Exp	1708
K^+ + Ar	Charge Transfer	1 MeV/u	Exp	1708
K^+ + Kr	Charge Transfer	1 MeV/u	Exp	1708
K^+ + Xe	Charge Transfer	1 MeV/u	Exp	1708
K^+ + H_2	Charge Transfer	1 MeV/u	Exp	1708
K^+ + H_2O	Charge Transfer	1 MeV/u	Exp	1708
K^+ + N_2	Charge Transfer	1 MeV/u	Exp	1708
K^+ + He	Ionization	1 MeV/u	Exp	1708
K^+ + Ne	Ionization	1 MeV/u	Exp	1708
K^+ + Ar	Ionization	1 MeV/u	Exp	1708
K^+ + Kr	Ionization	1 MeV/u	Exp	1708
K^+ + Xe	Ionization	1 MeV/u	Exp	1708
K^+ + H_2	Ionization	1 MeV/u	Exp	1708
K^+ + H_2O	Ionization	1 MeV/u	Exp	1708
K^+ + N_2	Ionization	1 MeV/u	Exp	1708
Ca + Ca	Interaction Potentials		Th	1704
Ca + NH_3	Interaction Potentials		Th	1705
Ti + He	Elastic Scattering	5.2−19.9 K	E/T	1553
Ti + He	Excitation	5.2−19.9 K	E/T	1553
Ti + He	De-excitation	0.001−6000 K	Th	1781
Fe^{26+} + H_2O	Charge Transfer	0.1−100 keV/u	Th	1543
Fe^{16+} + O_2	Charge Transfer	1.10−2.45 keV	Exp	1573
Fe^{17+} + O_2	Charge Transfer	1.10−2.45 keV	Exp	1573

Fe^{18+} + O_2	Charge Transfer	1.10−2.45 keV	Exp	1573
Fe^{19+} + O_2	Charge Transfer	1.10−2.45 keV	Exp	1573
Fe^{20+} + O_2	Charge Transfer	1.10−2.45 keV	Exp	1573
Fe^{21+} + O_2	Charge Transfer	1.10−2.45 keV	Exp	1573
Fe^{22+} + O_2	Charge Transfer	1.10−2.45 keV	Exp	1573
Fe^{23+} + O_2	Charge Transfer	1.10−2.45 keV	Exp	1573
Ni + N	Charge Transfer	200 MeV/u	Exp	1476
Ni^{28+} + C	Charge Transfer	200 MeV/u	Exp	1476
Ni^{28+} + Ne	Charge Transfer	200 MeV/u	Exp	1476
Ni^{28+} + Al	Charge Transfer	200 MeV/u	Exp	1476
Ni^{28+} + Ti	Charge Transfer	200 MeV/u	Exp	1476
Ni^{28+} + C_2H_4	Charge Transfer	200 MeV/u	Exp	1476
Ni^{28+} + $(C_3H_6)n$	Charge Transfer	200 MeV/u	Exp	1476
Ni^{27+} + C	Ionization	200 MeV/u	Exp	1476
Ni^{27+} + N	Ionization	200 MeV/u	Exp	1476
Ni^{27+} + Ne	Ionization	200 MeV/u	Exp	1476
Ni^{27+} + Al	Ionization	200 MeV/u	Exp	1476
Ni^{27+} + Ti	Ionization	200 MeV/u	Exp	1476
Ni^{27+} + C_2H_4	Ionization	200 MeV/u	Exp	1476
Ni^{27+} + $(C_3H_6)n$	Ionization	200 MeV/u	Exp	1476
Cu + H	Energy Transfer		Th	1759
Cu + He	Energy Transfer		Th	1759
Cu + Ne	Energy Transfer		Th	1759
Cu + Ar	Energy Transfer		Th	1759
Cu + Kr	Energy Transfer		Th	1759
Cu + Xe	Energy Transfer		Th	1759
Cu^* + H	Energy Transfer		Th	1759
Cu^* + He	Energy Transfer		Th	1759
Cu^* + Ne	Energy Transfer		Th	1759
Cu^* + Ar	Energy Transfer		Th	1759
Cu^* + Kr	Energy Transfer		Th	1759
Cu^* + Xe	Energy Transfer		Th	1759
Ge^- + He	Detachment	1−81 keV/u	E/T	1669
Ge^- + Ne	Detachment	1−81 keV/u	E/T	1669
Ge^- + Ar	Detachment	1−81 keV/u	E/T	1669
Kr + Xe	Association	292−299 nm	Exp	1446
Kr + Xe^*	Association	292−299 nm	Exp	1446
Kr^* + Xe	Association	292−299 nm	Exp	1446
Kr + Xe	Interaction Potentials	292−299 nm	Exp	1446
Kr + Xe^*	Interaction Potentials	292−299 nm	Exp	1446
Kr^* + Xe	Interaction Potentials	292−299 nm	Exp	1446
Kr^{34+} + H_2	Ionization	2.5−63 MeV/u	Th	1516
Kr + Kr	Interaction Potentials		Th	1526
Kr + Xe	Interaction Potentials		Th	1526
Kr + He	Interaction Potentials		Th	1534
Kr + Ne	Interaction Potentials		Th	1534
Kr + Ar	Interaction Potentials		Th	1534
Kr + Kr	Interaction Potentials		Th	1534
Kr + In	Ionization	6−15 MeV/amu	Exp	1552
Kr + Sn	Ionization	6−15 MeV/amu	Exp	1552
Kr + Sm	Ionization	6−15 MeV/amu	Exp	1552
Kr + Tb	Ionization	6−15 MeV/amu	Exp	1552
Kr + Ho	Ionization	6−15 MeV/amu	Exp	1552
Kr^{34+} + H_2	Ionization	60 MeV; 2.4 keV; 0−20 a.u.	Th	1628
Kr^{34+} + H_2	Ionization	1−60 MeV/u	Exp	1632
Kr^{34+} + H_2	Ionization	1−60 MeV	E/T	1747
Kr^{34+} + N_2	Ionization	1−60 MeV	E/T	1747

Kr^+ + V	Fluorescence	15 MeV/u	Exp	1757
Kr^+ + V_2O_5	Fluorescence	15 MeV/u	Exp	1757
Kr^+ + VO	Fluorescence	15 MeV/u	Exp	1757
Kr^+ + V_2O_4	Fluorescence	15 MeV/u	Exp	1757
Kr^{7+} + H	Ionization	1−35 MeV/amu	Th	1770
Kr^{7+} + N	Ionization	1−35 MeV/amu	Th	1770
Kr^{7+} + Ne	Ionization	1−35 MeV/amu	Th	1770
Kr^{7+} + Ar	Ionization	1−35 MeV/amu	Th	1770
Kr^{7+} + Kr	Ionization	1−35 MeV/amu	Th	1770
Kr^{7+} + Xe	Ionization	1−35 MeV/amu	Th	1770
Kr^{7+} + U	Ionization	1−35 MeV/amu	Th	1770
Rb + OH	Elastic Scattering	10^{-6}-1 K	Th	1470
Rb + OH	Interaction Potentials	10^{-6}-1 K	Th	1470
Rb + OH	Excitation	10^{-6}-1 K	Th	1470
Rb + NH	Elastic Scattering	10^{-7}-0.5 cm^{-1}	Th	1472
Rb + NH	Detachment	10^{-7}-0.5 cm^{-1}	Th	1472
Rb + NH	Excitation	10^{-7}-0.5 cm^{-1}	Th	1472
Rb + NH	De-excitation	10^{-7}-1−$^{-1}$ cm^{-1}	Th	1524
Rb + NH	Elastic Scattering	10^{-7}-1−$^{-1}$ cm^{-1}	Th	1524
Rb + NH	Excitation	10^{-7}-1−$^{-1}$ cm^{-1}	Th	1524
Rb + Ne	Interaction Potentials		Th	1526
Rb + Ar	Interaction Potentials		Th	1526
Rb + Kr	Interaction Potentials		Th	1526
Rb + Xe	Interaction Potentials		Th	1526
Rb + Rb	Line Broadening	16.5−30 deg C	Th	1690
Rb + NH_3	Interaction Potentials		Th	1705
Sr + NH_3	Interaction Potentials		Th	1705
Zr^{39+} + A	Excitation	0.1−2 GeV/u	E/T	1512
Ag^{47+} + H	Total Scattering	400−643 MeV/u	Th	1455
Ag^{47+} + C	Total Scattering	400−643 MeV/u	Th	1455
Ag^{47+} + Ar	Total Scattering	400−643 MeV/u	Th	1455
Ag^{47+} + H	Ionization	400−643 MeV/u	Th	1455
Ag^{47+} + C	Ionization	400−643 MeV/u	Th	1455
Ag^{47+} + Ar	Ionization	400−643 MeV/u	Th	1455
Ag^+ + V	Fluorescence	15 MeV/u	Exp	1757
Ag^+ + V_2O_5	Fluorescence	15 MeV/u	Exp	1757
Ag^+ + VO	Fluorescence	15 MeV/u	Exp	1757
Ag^+ + V_2O_4	Fluorescence	15 MeV/u	Exp	1757
Ag + H	Energy Transfer		Th	1759
Ag + He	Energy Transfer		Th	1759
Ag + Ne	Energy Transfer		Th	1759
Ag + Ar	Energy Transfer		Th	1759
Ag + Kr	Energy Transfer		Th	1759
Ag + Xe	Energy Transfer		Th	1759
Ag^* + H	Energy Transfer		Th	1759
Ag^* + He	Energy Transfer		Th	1759
Ag^* + Ne	Energy Transfer		Th	1759
Ag^* + Ar	Energy Transfer		Th	1759
Ag^* + Kr	Energy Transfer		Th	1759
Ag^* + Xe	Energy Transfer		Th	1759
I^{5+} + He	Ionization	1−10 v(a.u.)	E/T	1672
I^{9+} + He	Ionization	1−10 v(a.u.)	E/T	1672
Xe^{54+} + C	Total Scattering	400−643 MeV/u	Th	1455
Xe^{54+} + Ar	Total Scattering	400−643 MeV/u	Th	1455
Xe^{54+} + C	Ionization	400−643 MeV/u	Th	1455
Xe^{54+} + Ar	Ionization	400−643 MeV/u	Th	1455
Xe + Xe	Interaction Potentials		Th	1526

Xe + In	Ionization	6−15 MeV/amu	Exp	1552
Xe + Sn	Ionization	6−15 MeV/amu	Exp	1552
Xe + Sm	Ionization	6−15 MeV/amu	Exp	1552
Xe + Tb	Ionization	6−15 MeV/amu	Exp	1552
Xe + Ho	Ionization	6−15 MeV/amu	Exp	1552
$\mathbf{Xe^{18+} + He}$	Ionization	1−100 MeV/u	Th	1569
$\mathbf{Xe^{18+} + Ne}$	Ionization	1−100 MeV/u	Th	1569
$\mathbf{Xe^{18+} + Ar}$	Ionization	1−100 MeV/u	Th	1569
$\mathbf{Xe^{18+} + Xe}$	Ionization	1−100 MeV/u	Th	1569
$\mathbf{Xe^{18+} + N_2}$	Ionization	1−100 MeV/u	Th	1569
$\mathbf{Xe^{+} + HCl}$	Interchange reaction	2.0−20.0 eV	Th	1581
$\mathbf{Xe^{18+} + Ar}$	Ionization	0.1−6.5 MeV/amu	Th	1694
$\mathbf{Xe^{18+} + Xe}$	Ionization	0.1−6.5 MeV/amu	Th	1694
$\mathbf{Xe + NH_3}$	Interaction Potentials		Th	1705
$\mathbf{Xe^{19+} + C_{60}}$	Dissociation	57 keV	Exp	1718
$\mathbf{Xe^{19+} + C_{70}}$	Dissociation	57 keV	Exp	1718
$\mathbf{Xe^{19+} + C_{60}}$	Charge Transfer	57 keV	Exp	1718
$\mathbf{Xe^{19+} + C_{70}}$	Charge Transfer	57 keV	Exp	1718
Xe + Xe	De-excitation	293−373 K	Exp	1719
Xe + Xe	Elastic Scattering	293−373 K	Exp	1719
$\mathbf{Xe^{3+} + H}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Xe^{3+} + N}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Xe^{3+} + Ne}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Xe^{3+} + Ar}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Xe^{3+} + Kr}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Xe^{3+} + Xe}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Xe^{3+} + U}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Xe^{18+} + H}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Xe^{18+} + N}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Xe^{18+} + Ne}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Xe^{18+} + Ar}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Xe^{18+} + Kr}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Xe^{18+} + Xe}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Xe^{18+} + U}$	Ionization	1−35 MeV/amu	Th	1770
Cs + NH	Elastic Scattering	10^{-7}-0.5 cm^{-1}	Th	1472
Cs + NH	Detachment	10^{-7}-0.5 cm^{-1}	Th	1472
Cs + NH	Excitation	10^{-7}-0.5 cm^{-1}	Th	1472
Cs + NH	De-excitation	10^{-7}-1−$^{-1}$ cm^{-1}	Th	1524
Cs + NH	Elastic Scattering	10^{-7}-1−$^{-1}$ cm^{-1}	Th	1524
Cs + NH	Excitation	10^{-7}-1−$^{-1}$ cm^{-1}	Th	1524
Cs + Ar	Line Broadening	23 deg C	Exp	1547
Cs + Ar	De-excitation	23 deg C	Exp	1547
Cs + Cs	Interaction Potentials	2−6 $\AA$	Th	1695
Cs + Ar	Excitation	0−100 Torr	Exp	1709
Cs + Cs	Energy Transfer	100 μ K	Exp	1711
$\mathbf{Cs^{*} + Cs^{*}}$	Energy Transfer	100 μ K	Exp	1711
Cs + Cs	Interaction Potentials	100 μ K	Exp	1711
$\mathbf{Cs^{*} + Cs^{*}}$	Interaction Potentials	100 μ K	Exp	1711
Cs + Cs	Ionization	100 μ K	Exp	1711
$\mathbf{Cs^{*} + Cs^{*}}$	Ionization	100 μ K	Exp	1711
Ba + Ba	Line Broadening	10−400 mb	Exp	1466
$\mathbf{Ba + Ba^{*}}$	Line Broadening	10−400 mb	Exp	1466
$\mathbf{Ba^{*} + Ba^{*}}$	Line Broadening	10−400 mb	Exp	1466
$\mathbf{Ba^{+} + He}$	Association	3−25 K	E/T	1492
$\mathbf{Ba^{+*} + He}$	Association	3−25 K	E/T	1492
$\mathbf{Ba^{+} + CO_2}$	Association	300 K	Exp	1716
$\mathbf{Ba^{+} + N_2O}$	Association	300 K	Exp	1716

Ba^{+} + O_2	Association	300 K	Exp	1716
Ho^{+} + V	Fluorescence	15 MeV/u	Exp	1757
Ho^{+} + V_2O_5	Fluorescence	15 MeV/u	Exp	1757
Ho^{+} + VO	Fluorescence	15 MeV/u	Exp	1757
Ho^{+} + V_2O_4	Fluorescence	15 MeV/u	Exp	1757
Yb + Yb	Excitation	0−1 mK	E/T	1667
Au^{53+} + He	Total Scattering	3.6−100 MeV/u	Th	1508
Au^{53+} + He	Ionization	3.6−100 MeV/u	Th	1508
Au^{6+} + He	Ionization	1−10 v(a.u.)	E/T	1672
Au^{8+} + He	Ionization	1−10 v(a.u.)	E/T	1672
Hg + Hg	Association	10^{-10}-10^{-3} a.u.	Th	1514
Hg^{*} + Hg	Association	10^{-10}-10^{-3} a.u.	Th	1514
Hg^{*} + Hg^{*}	Association	10^{-10}-10^{-3} a.u.	Th	1514
Hg + Hg	Interaction Potentials	10^{-10}-10^{-3} a.u.	Th	1514
Hg^{*} + Hg	Interaction Potentials	10^{-10}-10^{-3} a.u.	Th	1514
Hg^{*} + Hg^{*}	Interaction Potentials	10^{-10}-10^{-3} a.u.	Th	1514
Pb^{81+} + Be	Ionization	33 TeV	Th	1565
Pb^{81+} + C	Ionization	33 TeV	Th	1565
Pb^{81+} + Al	Ionization	33 TeV	Th	1565
Pb^{81+} + Ar	Ionization	33 TeV	Th	1565
Pb^{81+} + Cu	Ionization	33 TeV	Th	1565
Pb^{81+} + Kr	Ionization	33 TeV	Th	1565
Pb^{81+} + Ag	Ionization	33 TeV	Th	1565
Pb^{81+} + Sn	Ionization	33 TeV	Th	1565
Pb^{81+} + Xe	Ionization	33 TeV	Th	1565
Pb^{81+} + Au	Ionization	33 TeV	Th	1565
Pb^{82+} + Be	Ionization	33 TeV	Th	1565
Pb^{82+} + C	Ionization	33 TeV	Th	1565
Pb^{82+} + Al	Ionization	33 TeV	Th	1565
Pb^{82+} + Ar	Ionization	33 TeV	Th	1565
Pb^{82+} + Cu	Ionization	33 TeV	Th	1565
Pb^{82+} + Kr	Ionization	33 TeV	Th	1565
Pb^{82+} + Ag	Ionization	33 TeV	Th	1565
Pb^{82+} + Sn	Ionization	33 TeV	Th	1565
Pb^{82+} + Xe	Ionization	33 TeV	Th	1565
Pb^{82+} + Au	Ionization	33 TeV	Th	1565
Pb^{81+} + Be	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{81+} + N	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{81+} + Al	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{81+} + Ar	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{81+} + Cu	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{81+} + Kr	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{81+} + Sn	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{81+} + Xe	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{81+} + Au	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{82+} + Be	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{82+} + N	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{82+} + Al	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{82+} + Ar	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{82+} + Cu	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{82+} + Kr	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{82+} + Sn	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{82+} + Xe	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{82+} + Au	Charge Transfer	160 GeV/amu	Exp	1633
Pb^{81+} + Be	Ionization	160 GeV/amu	Exp	1633
Pb^{81+} + N	Ionization	160 GeV/amu	Exp	1633
Pb^{81+} + Al	Ionization	160 GeV/amu	Exp	1633

$\mathbf{Pb^{81+} + Ar}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{81+} + Cu}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{81+} + Kr}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{81+} + Sn}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{81+} + Xe}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{81+} + Au}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{82+} + Be}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{82+} + N}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{82+} + Al}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{82+} + Ar}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{82+} + Cu}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{82+} + Kr}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{82+} + Sn}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{82+} + Xe}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{82+} + Au}$	Ionization	160 GeV/amu	Exp	1633
$\mathbf{Pb^{81+} + Al}$	Ionization	33 TeV	Th	1675
$\mathbf{Pb^{25+} + H}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Pb^{25+} + N}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Pb^{25+} + Ne}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Pb^{25+} + Ar}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Pb^{25+} + Kr}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Pb^{25+} + Xe}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Pb^{25+} + U}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{Bi^{82+} + Kr}$	Excitation	0.1−2 GeV/u	E/T	1512
Bi + He	De-excitation	0.5 K	E/T	1714
Bi + He	Energy Transfer	0.5 K	E/T	1714
Bi + He	Interaction Potentials	0.5 K	E/T	1714
$\mathbf{U^{92+} + H}$	Total Scattering	400−643 MeV/u	Th	1455
$\mathbf{U^{92+} + C}$	Total Scattering	400−643 MeV/u	Th	1455
$\mathbf{U^{92+} + H}$	Ionization	400−643 MeV/u	Th	1455
$\mathbf{U^{92+} + C}$	Ionization	400−643 MeV/u	Th	1455
$\mathbf{U^{90+} + H^+}$	Ionization	0.1−1.0 GeV/amu	Th	1461
$\mathbf{U^{91+} + H^+}$	Ionization	0.1−1.0 GeV/amu	Th	1461
$\mathbf{U^{91+} + A}$	Excitation	0.1−2 GeV/u	E/T	1512
$\mathbf{U^{92+} + A}$	Excitation	0.1−2 GeV/u	E/T	1512
$\mathbf{U^{91+} + Si}$	Charge Transfer	20 MeV/u	Exp	1540
$\mathbf{U^{90+} + Ar}$	Ionization	223.2 MeV/u	Th	1568
$\mathbf{U^{90+} + Kr}$	Ionization	223.2 MeV/u	Th	1568
$\mathbf{U^{90+} + Xe}$	Ionization	223.2 MeV/u	Th	1568
$\mathbf{U^{90+} + A}$	Ionization	223.2 MeV/u	Th	1568
$\mathbf{U^{28+} + Ar}$	Ionization	1−100 MeV/u	Th	1569
$\mathbf{U^{88+} + N_2}$	Charge Transfer	90 MeV	Exp	1654
$\mathbf{U^{28+} + Ar}$	Ionization	0.1−6.5 MeV/amu	Th	1694
$\mathbf{U^{21+} + He}$	Ionization	1 MeV	Th	1696
$\mathbf{U^{18+} + H}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{18+} + N}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{18+} + Ne}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{18+} + Ar}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{18+} + Kr}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{18+} + Xe}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{18+} + U}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{28+} + H}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{28+} + N}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{28+} + Ne}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{28+} + Ar}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{28+} + Kr}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{28+} + Xe}$	Ionization	1−35 MeV/amu	Th	1770

$\mathbf{U^{28+} + U}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{39+} + H}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{39+} + N}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{39+} + Ne}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{39+} + Ar}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{39+} + Kr}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{39+} + Xe}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{39+} + U}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{62+} + H}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{62+} + N}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{62+} + Ne}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{62+} + Ar}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{62+} + Kr}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{62+} + Xe}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{U^{62+} + U}$	Ionization	1−35 MeV/amu	Th	1770
$\mathbf{h}\nu\mathbf{ + F^-}$	Detachment	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + Cl^-}$	Detachment	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + Br^-}$	Detachment	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + I^-}$	Detachment	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + He}$	Ionization	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + Li^+}$	Ionization	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + F^-}$	Ionization	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + Ne}$	Ionization	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + Na^+}$	Ionization	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + Cl^-}$	Ionization	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + Ar}$	Ionization	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + K^+}$	Ionization	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + Br^-}$	Ionization	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + Kr}$	Ionization	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + Rb^+}$	Ionization	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + I^-}$	Ionization	25−1000 keV	E/T	1721
$\mathbf{h}\nu\mathbf{ + Xe}$	Ionization	25−1000 keV	E/T	1721
$\mathbf{H_2 + N_2}$	Line Broadening	5,600−9,500 cm^{-1}	Th	1451
$\mathbf{H_2 + He}$	Interaction Potentials		Th	1468
$\mathbf{H_2 + H_2}$	Elastic Scattering	10^{-6}-10^{2} K	Th	1546
$\mathbf{H_2 + H_2}$	Energy Transfer	10^{-6}-10^{2} K	Th	1546
$\mathbf{H_2 + H_2O}$	De-excitation	20−2000 K	Th	1571
$\mathbf{H_2 + H_2O^*}$	De-excitation	20−2000 K	Th	1571
$\mathbf{H_2 + H_2O}$	Excitation	20−2000 K	Th	1571
$\mathbf{H_2 + H_2}$	Energy Transfer	0.1−1.0 eV	Th	1585
$\mathbf{H_2 + H_2}$	Excitation	0.1−1.0 eV	Th	1585
$\mathbf{H_2 + C_2H}$	Interchange reaction	0.0−0.6 eV	Th	1588
$\mathbf{H_2{}^+ + He}$	Interchange reaction	0.0−2.0 eV	Th	1589
$\mathbf{H_2 + NH_2}$	Interchange reaction	200−2000 K	Th	1591
$\mathbf{H_2 + H_2}$	Excitation	0−1.2 eV	Th	1600
$\mathbf{H_2 + H_2}$	De-excitation	2−10,000 K	Th	1685
$\mathbf{H_2 + H_2}$	Excitation	2−10,000 K	Th	1685
$\mathbf{H_2 + H_2O}$	Excitation	200−5000 K	Th	1724
$\mathbf{H_2 + H_2O}$	Excitation	0−1500 K	Th	1726
$\mathbf{H_2 + H_2}$	Excitation	0.001−1.0 eV	Th	1731
$\mathbf{H_2{}^+ + He}$	Dissociation	10 keV	Exp	1771
$\mathbf{H_2{}^+ + He}$	Charge Transfer	10 keV	Exp	1771
$\mathbf{HD^+ + He}$	Interchange reaction	0.0−2.0 eV	Th	1589
$\mathbf{D + CH_4}$	Interchange reaction	0−5000 K	Th	1738
$\mathbf{D^+ + D}$	Elastic Scattering	1.8−3.2 MeV	Exp	1769
$\mathbf{D^+ + D}$	Total Scattering	1.8−3.2 MeV	Exp	1769
$\mathbf{CH^+ + CH}$	Interaction Potentials		Th	1559

CH_3 + CH_4	Interchange reaction	0−5000 K	Th	1738
CO_2^+ + He	Dissociation	1−9 keV	E/T	1723
N_2 + N_2	Interaction Potentials		Th	1468
N_2^+ + He	De-excitation	10^{-6}-10^3 cm^{-1}	Th	1506
N_2^+ + He	Energy Transfer	10^{-6}-10^3 cm^{-1}	Th	1506
N_2^+ + He	De-excitation	10^{-8}-10^0 cm^{-1}	Th	1677
N_2 + N_2	De-excitation	3 MeV; 300 deg K	Exp	1680
N_2^* + N_2	De-excitation	3 MeV; 300 deg K	Exp	1680
N_2 + N_2	De-excitation	4.3 MeV; 250−300 deg K	Exp	1681
N_2^* + N_2	De-excitation	4.3 MeV; 250−300 deg K	Exp	1681
N_2 + H_2O	De-excitation	10 keV; 300 deg K	Exp	1682
N_2 + N_2	De-excitation	10 keV; 300 deg K	Exp	1682
N_2^* + H_2O	De-excitation	10 keV; 300 deg K	Exp	1682
N_2^* + N_2	De-excitation	10 keV; 300 deg K	Exp	1682
N_2 + N_2	De-excitation	50 keV; 300 deg K	E/T	1683
N_2 + O_2	De-excitation	50 keV; 300 deg K	E/T	1683
N_2^* + N_2	De-excitation	50 keV; 300 deg K	E/T	1683
N_2^* + O_2	De-excitation	50 keV; 300 deg K	E/T	1683
NH + NH	De-excitation	10^{-6}-0.5 K	Th	1663
NH + NH	Elastic Scattering	10^{-6}-0.5 K	Th	1663
O_2 + He	Elastic Scattering	10^{-9}-10^{-2} K	Th	1551
O_2 + He	Excitation	10^{-9}-10^{-2} K	Th	1551
O_2 + O_2	Energy Transfer	150−450 K	Th	1736
Br_2 + H_2	Interaction Potentials		Th	1468
SiH_4 + H	Interchange reaction	300−1600 K	Th	1618
SiH_4 + H	Interaction Potentials	300−1600 K	Th	1618
HF + H	De-excitation	0.00−0.03 eV	Th	1584
HF + H	Interchange reaction	0.00−0.03 eV	Th	1584
OH + O	Interchange reaction	0.0−0.8 eV	Th	1579
OH + H_2	Interchange reaction	200−2400 K	Th	1603
OH + O	Interchange reaction	0−350 K	Th	1616
K_2 + K	Elastic Scattering	10^{-9}-10^{-2} K	Th	1551
K_2 + K	Excitation	10^{-9}-10^{-2} K	Th	1551
Na_2 + Na	Elastic Scattering	10^{-9}-10^{-2} K	Th	1551
Na_2 + Na	Excitation	10^{-9}-10^{-2} K	Th	1551
C_2^+ + Si	Recombination	900−2200 keV/atom	E/T	1662
C_2 + H_2	De-excitation	0.1−4000 cm^{-1}	Th	1737
C_2 + H_2	Excitation	0.1−4000 cm^{-1}	Th	1737
HCO^+ + He	Line Broadening	77−296 K	Th	1530
HCO^+ + Ar	Line Broadening	77−296 K	Th	1530
C_3 + He	De-excitation	5−15 K	Th	1576
C_3 + He	Excitation	5−15 K	Th	1576
A^{6+} + He	Charge Transfer	0.35−0.49 a.u.	Exp	1522
A^{7+} + He	Charge Transfer	0.35−0.49 a.u.	Exp	1522
A^{8+} + He	Charge Transfer	0.35−0.49 a.u.	Exp	1522
A^{9+} + He	Charge Transfer	0.35−0.49 a.u.	Exp	1522
A^{11+} + He	Charge Transfer	0.35−0.49 a.u.	Exp	1522
LiH + H	Interchange reaction	10−10,000 K	E/T	1727
CaH + CaH	De-excitation	10^{-6}-0.5 K	Th	1663
CaH + CaH	Elastic Scattering	10^{-6}-0.5 K	Th	1663
MgH + MgH	De-excitation	10^{-6}-0.5 K	Th	1663
MgH + MgH	Elastic Scattering	10^{-6}-0.5 K	Th	1663
BaO^+ + CO	Association	300 K	Exp	1716
H^+ + H Z= 63-92	Charge Transfer	0−600 MeV/u	Th	1621
H^+ + He Z= 63-92	Charge Transfer	0−600 MeV/u	Th	1621
H^+ + Li Z= 63-92	Charge Transfer	0−600 MeV/u	Th	1621

2.3 Surface Interactions

H^+ + LiF	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + LiCl	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + NaCl	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + KCl	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + NaF	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + KBr	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + NaI	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + KI	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + RbI	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + RbCl	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + LiI	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + RbF	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + KF	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + RbBr	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + LiBr	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + NaBr	Secondary Electron Emission	2−6 v (a.u.)	Th	1787
H^+ + LiF	Secondary Electron Emission	100−300 keV	E/T	1789
H^+ + KCl	Secondary Electron Emission	100−300 keV	E/T	1789
H^+ + KI	Secondary Electron Emission	100−300 keV	E/T	1789
H + C	Secondary Electron Emission	2.5−3.5 MeV	Exp	1790
H^+ + C	Secondary Electron Emission	2.5−3.5 MeV	Exp	1790
H + Si	Reflection	50−150 eV	E/T	1795
H + C	Sputtering	0−800 eV	Exp	1803
H^+ + Mo	Trapping, Detrapping	200 eV	Exp	1804
H^+ + Ni	Reflection	1−2 keV	Exp	1829
H^+ + C	Sputtering	100−1000 eV	Exp	1830
H + Si	Adsorption, Desorption	300 deg K	Exp	1851
H^+ + C	Sputtering	10−750 eV	Exp	1860
H + Ni	Sputtering	10-10^5 eV	E/T	1862
H^- + Ag	Reflection	1−4 keV	Exp	1866
H + Fe	Trapping, Detrapping		Th	1869
H + SS	Trapping, Detrapping		Th	1869
H + W	Trapping, Detrapping	38 eV	Exp	1871
H + C	Trapping, Detrapping	300 deg K	Exp	1873
H^+ + Fe	Trapping, Detrapping	1.7 keV	Exp	1874
H^+ + SS	Trapping, Detrapping	1.7 keV	Exp	1874
H + W	Trapping, Detrapping	100−400 eV	Exp	1875
H^+ + C	Trapping, Detrapping	80−450 eV	Exp	1878
H^+ + Be	Sputtering	5−140 eV	Exp	1879
H + C	Sputtering	2−30 eV	Th	1880
H + W	Reflection		Exp	1881
H + W	Trapping, Detrapping		Exp	1881
H^+ + Mo	Trapping, Detrapping	30−350 eV	Exp	1882
H^+ + Be	Trapping, Detrapping	1 keV	Exp	1883
H^+ + W	Trapping, Detrapping	1 keV	Exp	1884
H + C	Trapping, Detrapping		Exp	1885
H^+ + W	Reflection	100 eV	Th	1890
H^+ + W	Trapping, Detrapping	100 eV	Th	1890
H^+ + W	Trapping, Detrapping	100 eV	Exp	1891
H^+ + Li	Sputtering	500 eV	Exp	1893
H^+ + C	Sputtering	500 eV	Exp	1893
H^+ + Ni	Reflection	5−200 keV	Exp	1900
H^+ + Au	Reflection	5−200 keV	Exp	1900
H + C	Adsorption, Desorption	0.1−1000 eV	Th	1909
H + C	Reflection	0.1−1000 eV	Th	1909

H^+ + Cu	Secondary Electron Emission	30 keV	Exp	1922
H^- + Na + Cu	Reflection	2 keV	E/T	1928
H^- + Cu	Reflection	2 keV	E/T	1928
H^- + Na + Cu	Neutraliz., Ioniz., Dissoc.	2 keV	E/T	1928
H^- + Cu	Neutraliz., Ioniz., Dissoc.	2 keV	E/T	1928
He + Fe	Neutraliz., Ioniz., Dissoc.	0.2−14 eV	Exp	1798
He^+ + Fe	Neutraliz., Ioniz., Dissoc.	0.2−14 eV	Exp	1798
He + Fe	Sputtering	0.2−14 eV	Exp	1798
He^+ + Fe	Sputtering	0.2−14 eV	Exp	1798
He + Na + Cu	Reflection		E/T	1805
He + Cu	Reflection	0−140 MeV	Th	1809
He + Xe	Reflection	0−140 MeV	Th	1809
He^+ + NiAl	Reflection	1−10 keV	Exp	1820
He^+ + Si	Reflection	4 keV	Th	1825
He^+ + Ni	Reflection	4 keV	Th	1825
He + Si	Sputtering	1−500 keV	Th	1826
He^+ + Cu	Secondary Electron Emission	1−5 keV	Exp	1831
He^+ + Al	Reflection	1−5 keV	E/T	1835
He^+ + Al	Secondary Electron Emission	1−5 keV	E/T	1835
He^+ + Al	Neutraliz., Ioniz., Dissoc.	1−5 keV	E/T	1835
He + Al	Reflection	1−10 keV	Th	1837
He + Al	Neutraliz., Ioniz., Dissoc.	1−10 keV	Th	1837
He + Al	Reflection	0.8−25 keV	E/T	1839
He^+ + Al	Reflection	0.8−25 keV	E/T	1839
He + Al	Neutraliz., Ioniz., Dissoc.	0.8−25 keV	E/T	1839
He^+ + Al	Neutraliz., Ioniz., Dissoc.	0.8−25 keV	E/T	1839
He^+ + H_2O	Sputtering	0.35−4.0 keV	Exp	1844
He + Ni	Sputtering	10-10^5 eV	E/T	1862
He + LiF	Reflection	1 keV	Exp	1865
He + LiF	Trapping, Detrapping	1 keV	Exp	1865
He + LiI	Reflection	3 keV	Exp	1867
He + C	Reflection	100 eV	Th	1868
He + Al	Reflection	100 eV	Th	1868
He^+ + Fe	Trapping, Detrapping	20 keV	Exp	1870
He^+ + SS	Trapping, Detrapping	20 keV	Exp	1870
He^+ + Al	Reflection	2 keV	Th	1899
He^+ + Ni	Reflection	5−200 keV	Exp	1900
He^+ + Au	Reflection	5−200 keV	Exp	1900
He^+ + Ni	Neutraliz., Ioniz., Dissoc.	1.5−2.0 keV	Exp	1901
He^+ + Cu	Reflection	1.5−2.0 keV	Exp	1902
He^{2+} + Al	Secondary Electron Emission	200−1000 eV	Exp	1904
He^{2+} + Fe	Secondary Electron Emission	200−1000 eV	Exp	1904
He^{2+} + Ni	Secondary Electron Emission	200−1000 eV	Exp	1904
He^{2+} + Gd	Secondary Electron Emission	200−1000 eV	Exp	1904
He + LiF	Reflection	3 keV	Th	1906
He^+ + H_2O	Sputtering	2 MeV	Exp	1915
He^+ + NaCl	Sputtering	2 MeV	Exp	1915
He^+ + Cu	Secondary Electron Emission	30 keV	Exp	1922
He + Al	Reflection	2−8 keV	Th	1925
He + Al	Neutraliz., Ioniz., Dissoc.	2−8 keV	Th	1925
He + C	Reflection	63 MeV	Exp	1929
He^{2+} + O	Reflection	64−500 eV	Exp	1930
He^{2+} + Ni	Reflection	64−500 eV	Exp	1930
He^{2+} + NiO	Reflection	64−500 eV	Exp	1930
He^{2+} + O	Neutraliz., Ioniz., Dissoc.	64−500 eV	Exp	1930
He^{2+} + Ni	Neutraliz., Ioniz., Dissoc.	64−500 eV	Exp	1930
He^{2+} + NiO	Neutraliz., Ioniz., Dissoc.	64−500 eV	Exp	1930

$Li^+ + Ni$	Reflection	4 keV	Th	1825
$Li^+ + Cu$	Secondary Electron Emission	1−5 keV	Exp	1831
$Li^+ + C$	Reflection	2−5 keV	Exp	1838
$Li^+ + C$	Neutraliz., Ioniz., Dissoc.	2−5 keV	Exp	1838
$Li^+ + Au$	Reflection	0−2.2 keV	Exp	1852
$Li^+ + Au$	Neutraliz., Ioniz., Dissoc.	0−2.2 keV	Exp	1852
$Li^+ + Cu$	Reflection	200−1800 eV	Th	1927
$Li^+ + Cu$	Neutraliz., Ioniz., Dissoc.	200−1800 eV	Th	1927
$C^+ + C$	Secondary Electron Emission	2−20 keV	Exp	1817
$C^+ + Al$	Secondary Electron Emission	0.1−10 keV/amu	Th	1824
C + W	Adsorption, Desorption	0−100 eV	Th	1876
$C^+ + W$	Adsorption, Desorption	0−100 eV	Th	1876
$C^{2+} + C$	Secondary Electron Emission	1 keV; 3.6−11.4 MeV	E/T	1914
$C^{2+} + Ni$	Secondary Electron Emission	1 keV; 3.6−11.4 MeV	E/T	1914
$C^{2+} + Ag$	Secondary Electron Emission	1 keV; 3.6−11.4 MeV	E/T	1914
$C^{2+} + Au$	Secondary Electron Emission	1 keV; 3.6−11.4 MeV	E/T	1914
N + Al	Sputtering	2 keV	Th	1823
$N^+ + H$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + He$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Be$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + C$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + O$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Ne$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Al$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Si$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Ar$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Ti$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Fe$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Ni$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Cu$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Ge$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Kr$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Mo$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Cd$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Sn$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Xe$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + W$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Pt$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Au$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Pb$	Surface Interactions	0.025−0.05 MeV/amu	E/T	1841
$N^+ + Cu$	Secondary Electron Emission	17.5−35 keV	Exp	1861
N + Ni	Sputtering	10-10^5 eV	E/T	1862
$O^+ + C$	Secondary Electron Emission	2−20 keV	Exp	1817
O + Ni	Sputtering	10-10^5 eV	E/T	1862
$Ne^{3+} + Al_2O_3$	Reflection	10−140 keV	Exp	1786
$Ne^{7+} + Al_2O_3$	Reflection	10−140 keV	Exp	1786
$Ne^+ + KCl$	Reflection	1−5 keV	Exp	1792
Ne^{7+} + PET	Reflection	3−40 keV	Exp	1801
$Ne^{7+} + C_{10}H_8O_4$	Reflection	3−40 keV	Exp	1801
$Ne^{2+} + Si$	Secondary Electron Emission	42−72 keV	Exp	1821
$Ne^{2+} + W$	Secondary Electron Emission	42−72 keV	Exp	1821
$Ne^{3+} + Si$	Secondary Electron Emission	42−72 keV	Exp	1821
$Ne^{3+} + W$	Secondary Electron Emission	42−72 keV	Exp	1821
$Ne^{4+} + Si$	Secondary Electron Emission	42−72 keV	Exp	1821
$Ne^{4+} + W$	Secondary Electron Emission	42−72 keV	Exp	1821
$Ne^{5+} + Si$	Secondary Electron Emission	42−72 keV	Exp	1821
$Ne^{5+} + W$	Secondary Electron Emission	42−72 keV	Exp	1821

Ne^{6+} + Si	Secondary Electron Emission	42−72 keV	Exp	1821
Ne^{6+} + W	Secondary Electron Emission	42−72 keV	Exp	1821
Ne^{7+} + Si	Secondary Electron Emission	42−72 keV	Exp	1821
Ne^{7+} + W	Secondary Electron Emission	42−72 keV	Exp	1821
Ne^{8+} + Si	Secondary Electron Emission	42−72 keV	Exp	1821
Ne + Al	Sputtering	2 keV	Th	1823
Ne + Si	Sputtering	1−500 keV	Th	1826
Ne^{+} + Cu	Secondary Electron Emission	1−5 keV	Exp	1831
Ne + Ni	Sputtering	10-10^5 eV	E/T	1862
Na^{+} + Cu	Neutraliz., Ioniz., Dissoc.		Th	1903
Na^{+} + Al	Secondary Electron Emission	200−1000 eV	E/T	1920
Na^{+} + Au	Secondary Electron Emission	200−1000 eV	E/T	1920
Al + Al	Sputtering	2 keV	Th	1823
Al^{+} + Al	Secondary Electron Emission	0.1−10 keV/amu	Th	1824
Si^{+} + Al	Reflection	2 keV	Exp	1813
Si^{+} + Al	Sputtering	2 keV	Exp	1813
Si^{+} + Al	Sputtering	1−5 keV	Exp	1819
Si^{+} + Si	Sputtering	1−5 keV	Exp	1819
Si^{+} + Al	Sputtering	2−5 keV	E/T	1845
Si^{+} + Si	Sputtering	2−5 keV	E/T	1845
Si^{+} + Cs	Sputtering	2−5 keV	E/T	1845
P^{+} + Al	Sputtering	1−5 keV	Exp	1819
P^{+} + Si	Sputtering	1−5 keV	Exp	1819
Ar^{+} + Al_2O_3	Reflection	10−140 keV	Exp	1786
Ar^{3+} + Al_2O_3	Reflection	10−140 keV	Exp	1786
Ar^{7+} + Al	Neutraliz., Ioniz., Dissoc.	2×10^6 cm/s	Th	1794
Ar^{8+} + Al	Neutraliz., Ioniz., Dissoc.	2×10^6 cm/s	Th	1794
Ar^{13+} + PET	Reflection	3−40 keV	Exp	1801
Ar^{13+} + $C_{10}H_8O_4$	Reflection	3−40 keV	Exp	1801
Ar^{+} + C	Sputtering	0−800 eV	Exp	1803
Ar + Ru	Reflection	0−0.2 eV	E/T	1807
Ar + Ru	Surface Interactions	0.8 eV	Th	1808
Ar^{+} + GaAs	Sputtering	50−200 eV	Th	1815
Ar^{+} + Ag	Sputtering	100−1500 eV	Exp	1816
Ar^{+} + Au	Sputtering	100−1500 eV	Exp	1816
Ar^{3+} + Al	Sputtering	7.5−32.5 keV	Exp	1818
Ar^{4+} + Al	Sputtering	7.5−32.5 keV	Exp	1818
Ar^{5+} + Al	Sputtering	7.5−32.5 keV	Exp	1818
Ar^{6+} + Al	Sputtering	7.5−32.5 keV	Exp	1818
Ar^{7+} + Al	Sputtering	7.5−32.5 keV	Exp	1818
Ar^{8+} + Al	Sputtering	7.5−32.5 keV	Exp	1818
Ar^{9+} + Al	Sputtering	7.5−32.5 keV	Exp	1818
Ar^{10+} + Al	Sputtering	7.5−32.5 keV	Exp	1818
Ar^{11+} + Al	Sputtering	7.5−32.5 keV	Exp	1818
Ar^{12+} + Al	Sputtering	7.5−32.5 keV	Exp	1818
Ar^{13+} + Al	Sputtering	7.5−32.5 keV	Exp	1818
Ar^{3+} + Si	Secondary Electron Emission	42−72 keV	Exp	1821
Ar^{4+} + Si	Secondary Electron Emission	42−72 keV	Exp	1821
Ar^{5+} + Si	Secondary Electron Emission	42−72 keV	Exp	1821
Ar^{6+} + Si	Secondary Electron Emission	42−72 keV	Exp	1821
Ar^{7+} + Si	Secondary Electron Emission	42−72 keV	Exp	1821
Ar^{8+} + Si	Secondary Electron Emission	42−72 keV	Exp	1821
Ar^{9+} + Si	Secondary Electron Emission	42−72 keV	Exp	1821
Ar^{10+} + Si	Secondary Electron Emission	42−72 keV	Exp	1821
Ar^{11+} + Si	Secondary Electron Emission	42−72 keV	Exp	1821
Ar^{12+} + Si	Secondary Electron Emission	42−72 keV	Exp	1821
Ar^{13+} + Si	Secondary Electron Emission	42−72 keV	Exp	1821

Ar + Al	Sputtering	2 keV	Th	1823
Ar^+ + Al	Secondary Electron Emission	0.1−10 keV/amu	Th	1824
Ar + Si	Sputtering	1−500 keV	Th	1826
Ar^+ + Cu	Secondary Electron Emission	1−5 keV	Exp	1831
Ar^+ + N + Cu	Sputtering	4−5 keV	Exp	1832
Ar^+ + O + Cu	Sputtering	4−5 keV	Exp	1832
Ar^+ + S + Cu	Sputtering	4−5 keV	Exp	1832
Ar^+ + Cl + Cu	Sputtering	4−5 keV	Exp	1832
Ar^+ + Br + Cu	Sputtering	4−5 keV	Exp	1832
Ar^+ + SiO_2	Secondary Electron Emission	20−120 eV	Exp	1834
Ar^+ + MgO	Secondary Electron Emission	20−120 eV	Exp	1834
Ar^+ + BaO	Secondary Electron Emission	20−120 eV	Exp	1834
Ar^+ + Al	Reflection	1−5 keV	E/T	1835
Ar^+ + Al	Secondary Electron Emission	1−5 keV	E/T	1835
Ar^+ + Al	Neutraliz., Ioniz., Dissoc.	1−5 keV	E/T	1835
Ar^+ + H_2O	Sputtering	0.35−4.0 keV	Exp	1844
Ar^+ + Ni	Sputtering	4 keV	Exp	1854
Ar^+ + NiAl	Sputtering	4 keV	Exp	1854
Ar^+ + Ni_3Al	Sputtering	4 keV	Exp	1854
Ar^+ + Si	Sputtering	20−30 keV	E/T	1855
Ar^+ + Ti	Sputtering	20−30 keV	E/T	1855
Ar^+ + C	Sputtering	1 keV	Exp	1856
Ar^+ + Cr	Sputtering	1 keV	Exp	1856
Ar^+ + Si	Sputtering	1 keV	Exp	1858
Ar^+ + Cr	Sputtering	1 keV	Exp	1858
Ar + Ni	Sputtering	10-10^5 eV	E/T	1862
Ar^+ + Cu + Pt	Chemical Reactions	1−320 keV	E/T	1863
Ar^+ + Cu + Pt	Sputtering	1−320 keV	E/T	1863
Ar^{8+} + Fe	Desorption	5−100 MeV/u	Exp	1895
Ar^{8+} + SS	Desorption	5−100 MeV/u	Exp	1895
Ar^{9+} + Fe	Desorption	5−100 MeV/u	Exp	1895
Ar^{9+} + SS	Desorption	5−100 MeV/u	Exp	1895
Ar^{10+} + Fe	Desorption	5−100 MeV/u	Exp	1895
Ar^{10+} + SS	Desorption	5−100 MeV/u	Exp	1895
Ar^{12+} + Fe	Desorption	5−100 MeV/u	Exp	1895
Ar^{12+} + SS	Desorption	5−100 MeV/u	Exp	1895
Ar^{8+} + Fe	Desorption	5−17.7 MeV/u	Exp	1897
Ar^{8+} + Cu	Desorption	5−17.7 MeV/u	Exp	1897
Ar^{8+} + Ta	Desorption	5−17.7 MeV/u	Exp	1897
Ar^{8+} + Au	Desorption	5−17.7 MeV/u	Exp	1897
Ar^{8+} + SS	Desorption	5−17.7 MeV/u	Exp	1897
Ar^{9+} + Fe	Desorption	5−17.7 MeV/u	Exp	1897
Ar^{9+} + Cu	Desorption	5−17.7 MeV/u	Exp	1897
Ar^{9+} + Ta	Desorption	5−17.7 MeV/u	Exp	1897
Ar^{9+} + Au	Desorption	5−17.7 MeV/u	Exp	1897
Ar^{9+} + SS	Desorption	5−17.7 MeV/u	Exp	1897
Ar^{12+} + Fe	Desorption	5−17.7 MeV/u	Exp	1897
Ar^{12+} + Cu	Desorption	5−17.7 MeV/u	Exp	1897
Ar^{12+} + Ta	Desorption	5−17.7 MeV/u	Exp	1897
Ar^{12+} + Au	Desorption	5−17.7 MeV/u	Exp	1897
Ar^{12+} + SS	Desorption	5−17.7 MeV/u	Exp	1897
Ar + In	Sputtering	5−15 keV	Exp	1908
Ar^+ + In	Sputtering	5−15 keV	Exp	1908
Ar^+ + W	Sputtering	20-10^5 eV	Exp	1910
Ar^+ + Au	Sputtering	20-10^5 eV	Exp	1910
Ar^+ + Si	Sputtering	0.5−1.0 keV	Th	1916
Ar + W	Adsorption, Desorption	1−63 MeV	Th	1923

Ar + W	Reflection	1−63 MeV	Th	1923
Ar + Pt	Sputtering	5 keV	Th	1926
K^+ + Si	Reflection	0.025−1.0 keV	Exp	1907
K^+ + Ag	Reflection	0.025−1.0 keV	Exp	1907
Ni + Ni	Sputtering	10-10^5 eV	E/T	1862
Cu^+ + Al	Secondary Electron Emission	0.1−10 keV/amu	Th	1824
Ga^+ + Si	Sputtering	2−30 keV	Th	1814
Ga^+ + Fe	Surface Interactions	30 keV	Exp	1896
Ga^+ + SS	Surface Interactions	30 keV	Exp	1896
Kr^{8+} + Al	Neutraliz., Ioniz., Dissoc.	2×10^6 cm/s	Th	1794
Kr + Al	Sputtering	2 keV	Th	1823
Kr^+ + Al	Secondary Electron Emission	0.1−10 keV/amu	Th	1824
Kr^+ + SiO_2	Secondary Electron Emission	20−120 eV	Exp	1834
Kr^+ + MgO	Secondary Electron Emission	20−120 eV	Exp	1834
Kr^+ + BaO	Secondary Electron Emission	20−120 eV	Exp	1834
Kr + Ni	Sputtering	10-10^5 eV	E/T	1862
Kr^+ + Be	Sputtering	5 keV	Exp	1917
Kr^+ + Cu	Sputtering	5 keV	Exp	1917
Kr^+ + CuBe	Sputtering	5 keV	Exp	1917
Ag^+ + Ag	Surface Interactions	5 keV	Th	1905
I^{51+} + W	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp	1788
I^{52+} + Be	Surface Interactions	182−186 eV	Exp	1799
I^{52+} + C	Surface Interactions	182−186 eV	Exp	1799
I^{52+} + Cu	Surface Interactions	182−186 eV	Exp	1799
I^{52+} + W	Surface Interactions	182−186 eV	Exp	1799
I^{53+} + Be	Surface Interactions	182−186 eV	Exp	1799
I^{53+} + C	Surface Interactions	182−186 eV	Exp	1799
I^{53+} + Cu	Surface Interactions	182−186 eV	Exp	1799
I^{53+} + W	Surface Interactions	182−186 eV	Exp	1799
I^{52+} + Be	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp	1799
I^{52+} + C	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp	1799
I^{52+} + Cu	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp	1799
I^{52+} + W	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp	1799
I^{53+} + Be	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp	1799
I^{53+} + C	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp	1799
I^{53+} + Cu	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp	1799
I^{53+} + W	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp	1799
I^{25+} + TiO_2	Sputtering	100−300 keV	Exp	1836
I^{30+} + TiO_2	Sputtering	100−300 keV	Exp	1836
I^{35+} + TiO_2	Sputtering	100−300 keV	Exp	1836
I^{40+} + TiO_2	Sputtering	100−300 keV	Exp	1836
I^{45+} + TiO_2	Sputtering	100−300 keV	Exp	1836
I^{50+} + TiO_2	Sputtering	100−300 keV	Exp	1836
Xe^{8+} + Al	Neutraliz., Ioniz., Dissoc.	2×10^6 cm/s	Th	1794
Xe^{25+} + PET	Reflection	3−40 keV	Exp	1801
Xe^{25+} + $C_{10}H_8O_4$	Reflection	3−40 keV	Exp	1801
Xe^{44+} + Si	Sputtering	1 keV	Th	1802
Xe^{44+} + W	Sputtering	1 keV	Th	1802
Xe + Al	Sputtering	2 keV	Th	1823
Xe + Si	Sputtering	1−500 keV	Th	1826
Xe^+ + SiO_2	Secondary Electron Emission	20−120 eV	Exp	1834
Xe^+ + MgO	Secondary Electron Emission	20−120 eV	Exp	1834
Xe^+ + BaO	Secondary Electron Emission	20−120 eV	Exp	1834
Xe + Si	Neutraliz., Ioniz., Dissoc.	300 deg K	Exp	1847
Xe + Ni	Sputtering	10-10^5 eV	E/T	1862
Xe^+ + Si	Sputtering	250−2000 eV	Exp	1864
Xe^+ + Cu	Desorption	1.4 MeV/amu	Th	1913

Xe^{+} + Rh	Desorption	1.4 MeV/amu	Th	1913
Xe^{+} + Au	Desorption	1.4 MeV/amu	Th	1913
Xe^{+} + Cu	Surface Interactions	1.4 MeV/amu	Th	1913
Xe^{+} + Rh	Surface Interactions	1.4 MeV/amu	Th	1913
Xe^{+} + Au	Surface Interactions	1.4 MeV/amu	Th	1913
Xe^{+} + C	Sputtering	30−1000 eV	Th	1919
Xe^{+} + Mo	Sputtering	30−1000 eV	Th	1919
Cs^{+} + C	Sputtering	14.5 keV	Exp	1822
Cs^{+} + Mo	Sputtering	1−5 keV	Exp	1828
Cs^{+} + Ag	Sputtering	5 keV	Exp	1846
Cs^{+} + Si	Sputtering	250−2000 eV	Exp	1864
Cs^{+} + Si	Reflection	0.025−1.0 keV	Exp	1907
Cs^{+} + Ag	Reflection	0.025−1.0 keV	Exp	1907
Pr^{57+} + W	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp	1788
Ho^{65+} + W	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp	1788
Au^{+} + C	Sputtering	120 MeV	Exp	1827
Bi^{73+} + W	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp	1788
Bi^{74+} + W	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp	1788
Bi^{75+} + W	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp	1788
Bi^{76+} + W	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp	1788
Bi^{77+} + W	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp	1788
Bi^{78+} + W	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp	1788
Bi^{79+} + W	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp	1788
Bi^{80+} + W	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp	1788
Bi^{81+} + W	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp	1788
U^{91+} + Si	Neutraliz., Ioniz., Dissoc.	20 MeV/u	Exp	1796
U^{73+} + Fe	Desorption	5−100 MeV/u	Exp	1895
U^{73+} + SS	Desorption	5−100 MeV/u	Exp	1895
hν + NiFe	Sputtering	2.6−13.1 J/cm^2	Exp	1800
hν + Ni_2MnGa	Sputtering	2.6−13.1 J/cm^2	Exp	1800
hν + Al	Secondary Electron Emission	44−100 eV	E/T	1840
e + PET	Reflection	500−1000 eV	Exp	1793
e + $C_{10}H_8O_4$	Reflection	500−1000 eV	Exp	1793
e + C	Secondary Electron Emission	0−5 keV	Exp	1810
e + Cu	Secondary Electron Emission	0−5 keV	Exp	1810
e + TiZrV	Secondary Electron Emission	0−5 keV	Exp	1810
e + Cs + Ge	Desorption	0−160 eV	Exp	1811
e + W	Reflection	8−21 eV	E/T	1833
e + W	Secondary Electron Emission	8−21 eV	E/T	1833
e + Cu	Reflection	500−3000 eV	E/T	1848
e + Cu	Reflection	0.2−1.0 keV	Th	1857
e + Au	Reflection	0.2−1.0 keV	Th	1857
e + Al	Reflection	0.2−30 keV	Exp	1859
e + Si	Reflection	0.2−30 keV	Exp	1859
e + Cr	Reflection	0.2−30 keV	Exp	1859
e + Ni	Reflection	0.2−30 keV	Exp	1859
e + Cu	Reflection	0.2−30 keV	Exp	1859
e + Ge	Reflection	0.2−30 keV	Exp	1859
e + Pd	Reflection	0.2−30 keV	Exp	1859
e + Ag	Reflection	0.2−30 keV	Exp	1859
e + Pt	Reflection	0.2−30 keV	Exp	1859
e + Au	Reflection	0.2−30 keV	Exp	1859
e + Al	Reflection	1−4 keV	Th	1894
e + Cu	Reflection	1−4 keV	Th	1894
e + Au	Reflection	1−4 keV	Th	1894
e + Al	Reflection	5−40 keV	Th	1898
e + Mo	Reflection	5−40 keV	Th	1898

e + Pt	Reflection	5−40 keV	Th	1898
e + C	Secondary Electron Emission	1 keV; 3.6−11.4 MeV	E/T	1914
e + Cu	Secondary Electron Emission	10−100 keV	Th	1921
e + Ag	Secondary Electron Emission	10−100 keV	Th	1921
e + TiO_2	Desorption	20−45 eV	Exp	1924
e + TiO_2	Sputtering	20−45 eV	Exp	1924
H_2 + Pd	Adsorption, Desorption	0−600 meV	Th	1806
H_2 + Pt	Adsorption, Desorption	0−600 meV	Th	1806
H_2 + NiAl	Adsorption, Desorption	0−600 meV	Th	1806
H_2 + ZrVFe	Adsorption, Desorption		E/T	1812
H_2^+ + Ni	Reflection	1−2 keV	Exp	1829
H_2^+ + C	Surface Interactions	100−1000 eV	Exp	1830
H_2^+ + C	Sputtering	100−1000 eV	Exp	1830
H_2 + Co	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + Ni	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + Cu	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + Ru	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + Rh	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + Pd	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + Ir	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + Pt	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + CO + Co	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + CO + Ni	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + CO + Cu	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + CO + Ru	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + CO + Rh	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + CO + Pd	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + CO + Ir	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + CO + Pt	Adsorption, Desorption	300 deg K	Exp	1849
H_2 + Pd	Neutraliz., Ioniz., Dissoc.	300 deg K	Th	1850
H_2^+ + C	Sputtering	10−750 eV	Exp	1860
H_2 + Fe	Trapping, Detrapping		Th	1869
H_2 + SS	Trapping, Detrapping		Th	1869
H_2^+ + Fe	Trapping, Detrapping	0.5 keV	Exp	1872
H_2^+ + SS	Trapping, Detrapping	0.5 keV	Exp	1872
H_2 + C	Reflection		Th	1877
H_2^+ + C	Trapping, Detrapping	80−450 eV	Exp	1878
H_2^+ + Be	Sputtering	5−140 eV	Exp	1879
H_2 + W	Reflection		Exp	1881
H_2 + W	Trapping, Detrapping		Exp	1881
H_2^+ + Mo	Trapping, Detrapping	30−350 eV	Exp	1882
H_2^+ + W	Trapping, Detrapping	1 keV	Exp	1884
H_2^+ + C	Trapping, Detrapping	10−1000 eV	Exp	1886
H_2^+ + C	Trapping, Detrapping	3 keV	Exp	1887
H_2^+ + Mo	Trapping, Detrapping	600−3000 eV	Exp	1888
H_2^+ + W	Trapping, Detrapping	600−3000 eV	Exp	1888
H_2^+ + WO_3	Trapping, Detrapping	1.5 keV	Exp	1889
H_2^+ + C	Adsorption, Desorption	0−100 eV	Exp	1911
H_2 + C	Sputtering	15−60 eV	Th	1912
H_2^+ + WO_3	Trapping, Detrapping	10 keV	Exp	1918
H_3^+ + C	Surface Interactions	100−1000 eV	Exp	1830
H_3^+ + C	Sputtering	100−1000 eV	Exp	1830
H_3^+ + C	Sputtering	10−750 eV	Exp	1860
H_3^+ + C	Trapping, Detrapping	80−450 eV	Exp	1878
H_3^+ + W	Trapping, Detrapping	1 keV	Exp	1884
H_3^+ + Mo	Trapping, Detrapping	600−3000 eV	Exp	1888
H_3^+ + W	Trapping, Detrapping	600−3000 eV	Exp	1888

$\mathbf{H_3^+ + W}$	Sputtering	9−12 keV	Exp	1892
$\mathbf{D^+ + Mo}$	Trapping, Detrapping	200 eV	Exp	1804
$\mathbf{D^+ + Ni}$	Reflection	1−2 keV	Exp	1829
$\mathbf{D^+ + C}$	Surface Interactions	100−1000 eV	Exp	1830
$\mathbf{D^+ + C}$	Sputtering	100−1000 eV	Exp	1830
$\mathbf{D^+ + C}$	Sputtering	10−750 eV	Exp	1860
D + Ni	Sputtering	10-10^5 eV	E/T	1862
D + W	Trapping, Detrapping	38 eV	Exp	1871
D + C	Trapping, Detrapping	300 deg K	Exp	1873
$\mathbf{D^+ + Fe}$	Trapping, Detrapping	1.7 keV	Exp	1874
$\mathbf{D^+ + SS}$	Trapping, Detrapping	1.7 keV	Exp	1874
D + W	Trapping, Detrapping	100−400 eV	Exp	1875
$\mathbf{D^+ + C}$	Trapping, Detrapping	80−450 eV	Exp	1878
$\mathbf{D^+ + Be}$	Sputtering	5−140 eV	Exp	1879
D + C	Sputtering	2−30 eV	Th	1880
D + W	Reflection		Exp	1881
D + W	Trapping, Detrapping		Exp	1881
$\mathbf{D^+ + Mo}$	Trapping, Detrapping	30−350 eV	Exp	1882
$\mathbf{D^+ + Be}$	Trapping, Detrapping	1 keV	Exp	1883
$\mathbf{D^+ + W}$	Trapping, Detrapping	1 keV	Exp	1884
$\mathbf{D^+ + W}$	Reflection	100 eV	Th	1890
$\mathbf{D^+ + W}$	Trapping, Detrapping	100 eV	Th	1890
$\mathbf{D^+ + W}$	Trapping, Detrapping	100 eV	Exp	1891
$\mathbf{D^+ + Li}$	Sputtering	500 eV	Exp	1893
$\mathbf{D^+ + C}$	Sputtering	500 eV	Exp	1893
$\mathbf{D_2^+ + Ni}$	Reflection	1−2 keV	Exp	1829
$\mathbf{D_2^+ + C}$	Surface Interactions	100−1000 eV	Exp	1830
$\mathbf{D_2^+ + C}$	Sputtering	100−1000 eV	Exp	1830
$\mathbf{D_2^+ + C}$	Sputtering	10−750 eV	Exp	1860
$\mathbf{D_2^+ + Fe}$	Trapping, Detrapping	0.5 keV	Exp	1872
$\mathbf{D_2^+ + SS}$	Trapping, Detrapping	0.5 keV	Exp	1872
$\mathbf{D_2^+ + C}$	Trapping, Detrapping	80−450 eV	Exp	1878
$\mathbf{D_2^+ + Be}$	Sputtering	5−140 eV	Exp	1879
$\mathbf{D_2 + W}$	Reflection		Exp	1881
$\mathbf{D_2 + W}$	Trapping, Detrapping		Exp	1881
$\mathbf{D_2^+ + Mo}$	Trapping, Detrapping	30−350 eV	Exp	1882
$\mathbf{D_2^+ + W}$	Trapping, Detrapping	1 keV	Exp	1884
$\mathbf{D_2^+ + C}$	Trapping, Detrapping	10−1000 eV	Exp	1886
$\mathbf{D_2^+ + C}$	Trapping, Detrapping	3 keV	Exp	1887
$\mathbf{D_2^+ + Mo}$	Trapping, Detrapping	600−3000 eV	Exp	1888
$\mathbf{D_2^+ + W}$	Trapping, Detrapping	600−3000 eV	Exp	1888
$\mathbf{D_2^+ + WO_3}$	Trapping, Detrapping	1.5 keV	Exp	1889
$\mathbf{D_2^+ + C}$	Adsorption, Desorption	0−100 eV	Exp	1911
$\mathbf{D_2 + C}$	Sputtering	15−60 eV	Th	1912
$\mathbf{D_3^+ + C}$	Surface Interactions	100−1000 eV	Exp	1830
$\mathbf{D_3^+ + C}$	Sputtering	100−1000 eV	Exp	1830
$\mathbf{D_3^+ + C}$	Sputtering	10−750 eV	Exp	1860
$\mathbf{D_3^+ + C}$	Trapping, Detrapping	80−450 eV	Exp	1878
$\mathbf{D_3^+ + W}$	Trapping, Detrapping	1 keV	Exp	1884
$\mathbf{D_3^+ + Mo}$	Trapping, Detrapping	600−3000 eV	Exp	1888
$\mathbf{D_3^+ + W}$	Trapping, Detrapping	600−3000 eV	Exp	1888
$\mathbf{D_3^+ + W}$	Sputtering	9−12 keV	Exp	1892
T + Ni	Sputtering	10-10^5 eV	E/T	1862
T + C	Sputtering	2−30 eV	Th	1880
CH + W	Adsorption, Desorption	0−100 eV	Th	1876
$\mathbf{CH^+ + W}$	Adsorption, Desorption	0−100 eV	Th	1876
$\mathbf{CH_2 + W}$	Adsorption, Desorption	0−100 eV	Th	1876

CH_2^+ + W	Adsorption, Desorption	0−100 eV	Th	1876
CH_2^+ + C	Adsorption, Desorption	0−100 eV	Exp	1911
CH_3 + W	Adsorption, Desorption	0−100 eV	Th	1876
CH_3^+ + W	Adsorption, Desorption	0−100 eV	Th	1876
CH_4 + W	Adsorption, Desorption	0−100 eV	Th	1876
CH_4^+ + W	Adsorption, Desorption	0−100 eV	Th	1876
CH_4 + W	Reflection	0−100 eV	Th	1876
CH_4 + W	Neutraliz., Ioniz., Dissoc.	0−100 eV	Th	1876
CD_2^+ + C	Adsorption, Desorption	0−100 eV	Exp	1911
CO^+ + C	Secondary Electron Emission	2−20 keV	Exp	1817
N_2 + Ru	Reflection	0−0.2 eV	E/T	1807
N_2 + Ru	Surface Interactions	0.8 eV	Th	1808
N_2 + W	Adsorption, Desorption	0−2.5 eV	Th	1842
N_2 + W	Neutraliz., Ioniz., Dissoc.	0−2.5 eV	Th	1842
N_2^+ + Cu	Secondary Electron Emission	17.5−35 keV	Exp	1861
O_2^+ + C	Secondary Electron Emission	2−20 keV	Exp	1817
O_2 + Cu	Adsorption, Desorption	25 MeV	Th	1843
O_2 + Pd	Adsorption, Desorption	25 MeV	Th	1843
O_2 + Cu	Neutraliz., Ioniz., Dissoc.	25 MeV	Th	1843
O_2 + Pd	Neutraliz., Ioniz., Dissoc.	25 MeV	Th	1843
O_2 + Cu	Adsorption, Desorption	130−800 deg K	Exp	1853
C_{60}^+ + Al	Reflection	2.5−62.5 keV	Exp	1791
C_{60}^+ + KCl	Reflection	1−5 keV	Exp	1792
C_2^- + W	Sputtering	9−12 keV	Exp	1892
C_3^+ + C	Neutraliz., Ioniz., Dissoc.	3 MeV	Exp	1797

2.4 Data Collection, Bibliographic and Progress Report

e + H	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + He	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Li	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Be	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + B	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + C	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + N	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + O	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + F	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Ne	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Na	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Mg	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Al	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Si	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + P	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + S	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Cl	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Ar	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + K	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Ca	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Sc	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Ti	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + V	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Cr	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Mn	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Fe	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Co	Data Collection, Bibliography	0−2000 eV	E/T	1931

e + Ni	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Cu	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Zn	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Ga	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + Ge	Data Collection, Bibliography	0−2000 eV	E/T	1931
e + H	Data Collection, Bibliography		E/T	1932
e + He	Data Collection, Bibliography		E/T	1932
e + Li	Data Collection, Bibliography		E/T	1932
e + Be	Data Collection, Bibliography		E/T	1932
e + B	Data Collection, Bibliography		E/T	1932
e + C	Data Collection, Bibliography		E/T	1932
e + N	Data Collection, Bibliography		E/T	1932
e + O	Data Collection, Bibliography		E/T	1932
e + F	Data Collection, Bibliography		E/T	1932
e + Ne	Data Collection, Bibliography		E/T	1932
e + Na	Data Collection, Bibliography		E/T	1932
e + Mg	Data Collection, Bibliography		E/T	1932
e + Al	Data Collection, Bibliography		E/T	1932
e + Si	Data Collection, Bibliography		E/T	1932
e + P	Data Collection, Bibliography		E/T	1932
e + S	Data Collection, Bibliography		E/T	1932
e + Cl	Data Collection, Bibliography		E/T	1932
e + Ar	Data Collection, Bibliography		E/T	1932
e + K	Data Collection, Bibliography		E/T	1932
e + Ca	Data Collection, Bibliography		E/T	1932
e + Sc	Data Collection, Bibliography		E/T	1932
e + Ti	Data Collection, Bibliography		E/T	1932
e + V	Data Collection, Bibliography		E/T	1932
e + Cr	Data Collection, Bibliography		E/T	1932
e + Mn	Data Collection, Bibliography		E/T	1932
e + Fe	Data Collection, Bibliography		E/T	1932
e + Co	Data Collection, Bibliography		E/T	1932
e + Ni	Data Collection, Bibliography		E/T	1932
e + Cu	Data Collection, Bibliography		E/T	1932
e + Zn	Data Collection, Bibliography		E/T	1932
e + H	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + He	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Li	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Be	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + B	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + C	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + N	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + O	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + F	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Ne	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Na	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Mg	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Al	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Si	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + P	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + S	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Cl	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Ar	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + K	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Ca	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Sc	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Ti	Data Collection, Bibliography	10^4-10^9 K	Th	1933

e + V	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Cr	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Mn	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Fe	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Co	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Ni	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Cu	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Zn	Data Collection, Bibliography	10^4-10^9 K	Th	1933
e + Ne^{8+}	Data Collection, Bibliography	10^6 K	Th	1934

2.5 Fusion Research of General Interest

plasma + Ar^{16+}	Fusion Research of Gen. Interest		Exp	1935
Ti ions	Fusion Research of Gen. Interest	200 Å	Th	1936
Cr ions	Fusion Research of Gen. Interest	200 Å	Th	1936
Mn ions	Fusion Research of Gen. Interest	200 Å	Th	1936

2.6 Particle Beam-Matter Interactions

H^+ + Al	Part. Beam-Matter Interaction	0.1−5 a.u.	Th	1938
H^+ + C	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th	1941
H^+ + Al	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th	1941
H^+ + Si	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th	1941
H^+ + Al	Part. Beam-Matter Interaction	0.2−6 v (a.u.)	Th	1945
H^+ + LiF	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + NaCl	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + KCl	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + NaF	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + LiCl	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + NaI	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + RbF	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + RbCl	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + RbBr	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + RbI	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + KI	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + LiI	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + KF	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + KBr	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + LiBr	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + NaBr	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th	1946
H^+ + LiF	Part. Beam-Matter Interaction	100−300 keV	E/T	1948
H^+ + KCl	Part. Beam-Matter Interaction	100−300 keV	E/T	1948
H^+ + KI	Part. Beam-Matter Interaction	100−300 keV	E/T	1948
H^+ + AlF_3	Part. Beam-Matter Interaction	0.7−25 keV	Th	1950
H^+ + Cu	Part. Beam-Matter Interaction	100 keV	Th	1952
H^+ + $Cu_{(111)}$	Part. Beam-Matter Interaction	100 keV	Th	1952
H^+ + Au	Part. Beam-Matter Interaction	1-10^5 keV/u	Th	1956
H^+ + Si	Part. Beam-Matter Interaction	15−100 keV	Th	1958
H^- + C	Part. Beam-Matter Interaction	60−800 MeV/u	Th	1959
H^+ + H_2O	Part. Beam-Matter Interaction	0.3−10 MeV/amu	Th	1967
H^+ + Si	Part. Beam-Matter Interaction	10^{-2}-10 MeV	Th	1968
H^+ + A	Part. Beam-Matter Interaction		Th	1971
H^+ + Si	Part. Beam-Matter Interaction	900−1500 keV	Exp	1976

H^+ + Si	Part. Beam-Matter Interaction	0.3−1.2 MeV/amu	Exp	1977
H^+ + A	Part. Beam-Matter Interaction	0.01−40 MeV	Exp	1978
H^+ + Mg	Part. Beam-Matter Interaction		Th	1981
H^+ + Ni	Part. Beam-Matter Interaction		Th	1983
H^+ + Gd	Part. Beam-Matter Interaction		Th	1983
H + Zn	Part. Beam-Matter Interaction	10−10,000 keV/u	E/T	1985
H^+ + Au	Part. Beam-Matter Interaction	0.16−5 keV	Exp	1986
H^- + Ag	Part. Beam-Matter Interaction	1−4 keV	Exp	1988
H^+ + e	Part. Beam-Matter Interaction	0−400 keV	Th	1990
H^+ + LiF	Part. Beam-Matter Interaction		Th	1995
H^+ + H	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th	1997
H^+ + He	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th	1997
H^+ + C	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th	1997
H^+ + Al	Part. Beam-Matter Interaction	1−100 MeV	Th	2000
H^+ + Si	Part. Beam-Matter Interaction	1−100 MeV	Th	2000
H^+ + Cu	Part. Beam-Matter Interaction	1−100 MeV	Th	2000
H^+ + Au	Part. Beam-Matter Interaction	1−100 MeV	Th	2000
H^+ + H_2	Part. Beam-Matter Interaction	1−100 MeV	Th	2000
H^+ + C	Part. Beam-Matter Interaction	0−4 v(a.u.)	Th	2002
He^+ + C	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th	1941
He^+ + Al	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th	1941
He^+ + Si	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th	1941
He^+ + H_2O	Part. Beam-Matter Interaction	3 keV	Exp	1944
He^+ + LiCl	Part. Beam-Matter Interaction	3 keV	Exp	1944
He^+ + Au	Part. Beam-Matter Interaction	1-10^5 keV/u	Th	1956
He^+ + Au	Part. Beam-Matter Interaction	1 MeV	Th	1961
He^+ + Si	Part. Beam-Matter Interaction	1.5 MeV	Th	1962
He^+ + SiO_2	Part. Beam-Matter Interaction	1.5 MeV	Th	1962
He^+ + Si	Part. Beam-Matter Interaction	1−10 MeV	Exp	1963
He^+ + Si	Part. Beam-Matter Interaction	0−700 keV/amu	E/T	1965
He^+ + SiC	Part. Beam-Matter Interaction	0−700 keV/amu	E/T	1965
He^{2+} + H_2O	Part. Beam-Matter Interaction	0.3−10 MeV/amu	Th	1967
He^+ + C	Part. Beam-Matter Interaction	420 MeV	Exp	1972
He^+ + Mg	Part. Beam-Matter Interaction	420 MeV	Exp	1972
He^+ + Ni	Part. Beam-Matter Interaction	420 MeV	Exp	1972
He^+ + Zr	Part. Beam-Matter Interaction	420 MeV	Exp	1972
He^+ + Sn	Part. Beam-Matter Interaction	420 MeV	Exp	1972
He^+ + Pb	Part. Beam-Matter Interaction	420 MeV	Exp	1972
He^{2+} + Si	Part. Beam-Matter Interaction	0.3−1.2 MeV/amu	Exp	1977
He + Zn	Part. Beam-Matter Interaction	10−10,000 keV/u	E/T	1985
He^{2+} + Zn	Part. Beam-Matter Interaction	10−10,000 keV/u	E/T	1985
He^+ + Au	Part. Beam-Matter Interaction	1−10 keV/u	E/T	1987
He + LiI	Part. Beam-Matter Interaction	3 keV	Exp	1989
He^+ + Ar	Part. Beam-Matter Interaction	0.01-10^4 MeV/amu	E/T	1992
He^+ + H_2O	Part. Beam-Matter Interaction	0.01-10^4 MeV/amu	E/T	1992
Li^+ + C	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th	1941
Li^+ + Al	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th	1941
Li^+ + Si	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th	1941
Li^+ + Ag	Part. Beam-Matter Interaction	10^{-3}-10 MeV	E/T	1964
Li^+ + SiO_2	Part. Beam-Matter Interaction	10^{-3}-10 MeV	E/T	1964
Li^+ + C	Part. Beam-Matter Interaction	1−6 MeV	Exp	1966
Li^+ + A	Part. Beam-Matter Interaction		Th	1971
Li^+ + C	Part. Beam-Matter Interaction		Exp	1975
Li + Zn	Part. Beam-Matter Interaction	10−10,000 keV/u	E/T	1985
Li^{3+} + Zn	Part. Beam-Matter Interaction	10−10,000 keV/u	E/T	1985
Li^+ + He	Part. Beam-Matter Interaction	0.01-10^4 MeV/amu	E/T	1992
Li^+ + Ag	Part. Beam-Matter Interaction	0.01-10^4 MeV/amu	E/T	1992

B^+ + Si	Part. Beam-Matter Interaction	15−100 keV	Th	1958
B^+ + Si	Part. Beam-Matter Interaction	10−200 keV	Th	1960
B^+ + Si	Part. Beam-Matter Interaction	20 keV	Th	1974
C^+ + C	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
C^+ + Al	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
C^+ + Si	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
C^+ + C	Part. Beam-Matter Interaction	10^{-3}-10 MeV	E/T	1964
C^+ + C	Part. Beam-Matter Interaction	1−6 MeV	Exp	1966
C^{6+} + H_2O	Part. Beam-Matter Interaction	0.3−10 MeV/amu	Th	1967
C^+ + C	Part. Beam-Matter Interaction		Exp	1975
C^+ + Si	Part. Beam-Matter Interaction	900−2200 keV/atom	E/T	1984
C^+ + C	Part. Beam-Matter Interaction	0.01-10^4 MeV/amu	E/T	1992
C^+ + H_2O	Part. Beam-Matter Interaction	0.01-10^4 MeV/amu	E/T	1992
N^+ + A	Part. Beam-Matter Interaction		Th	1971
N^+ + H	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + He	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Be	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + C	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + O	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Ne	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Al	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Si	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Ar	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Ti	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Fe	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Ni	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Cu	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Ge	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Kr	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Mo	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Cd	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Sn	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Xe	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + W	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Pt	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Au	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
N^+ + Pb	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T	1982
O^+ + A	Part. Beam-Matter Interaction		Th	1971
Ne^{2+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th	1997
Ne^{3+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th	1997
Ne^{4+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th	1997
Ne^{5+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th	1997
Ne^{6+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th	1997
Ne^{7+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th	1997
Ne^{8+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th	1997
Ne^{9+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th	1997
Ne^{10+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th	1997
Ne^+ + LiF	Part. Beam-Matter Interaction	1000 MeV/amu	Th	1998
Si^+ + Si	Part. Beam-Matter Interaction	1−100 keV	E/T	1957
Si^+ + Si	Part. Beam-Matter Interaction	15−100 keV	Th	1958
P^+ + Si	Part. Beam-Matter Interaction	15−100 keV	Th	1958
P^+ + Si	Part. Beam-Matter Interaction	10−200 keV	Th	1960
Ar^{18+} + C	Part. Beam-Matter Interaction	13.6 MeV/u	E/T	1943
Ar^+ + Ar	Part. Beam-Matter Interaction	1−100 keV	E/T	1957
Ar^+ + Si	Part. Beam-Matter Interaction	15−100 keV	Th	1958
Ar^{18+} + C	Part. Beam-Matter Interaction	60−800 MeV/u	Th	1959
Ar^+ + Ne	Part. Beam-Matter Interaction	0.01-10^4 MeV/amu	E/T	1992

Ar^+ + Ag	Part. Beam-Matter Interaction	3−10 keV	Th	1996
Ar^{17+} + Si	Part. Beam-Matter Interaction	390 MeV/u	Th	2001
Fe^+ + LiF	Part. Beam-Matter Interaction	1000 MeV/amu	Th	1998
Cu^+ + Au	Part. Beam-Matter Interaction	6−25 MeV	Exp	1970
Ge^+ + Ge	Part. Beam-Matter Interaction	1−100 keV	E/T	1957
As^+ + Si	Part. Beam-Matter Interaction	15−100 keV	Th	1958
Kr^+ + Si	Part. Beam-Matter Interaction	15−100 keV	Th	1958
Kr^{35+} + C	Part. Beam-Matter Interaction	60−800 MeV/u	Th	1959
Xe^+ + Xe	Part. Beam-Matter Interaction	1−100 keV	E/T	1957
Nd^+ + Cd	Part. Beam-Matter Interaction	600−685 keV	Exp	1991
Pm^+ + Cd	Part. Beam-Matter Interaction	600−685 keV	Exp	1991
Sm^+ + Cd	Part. Beam-Matter Interaction	600−685 keV	Exp	1991
Au^+ + LiF	Part. Beam-Matter Interaction	1000 MeV/amu	Th	1998
Pb^{53+} + Ta	Part. Beam-Matter Interaction	450−1363 keV	E/T	1939
Pb^{54+} + Ta	Part. Beam-Matter Interaction	450−1363 keV	E/T	1939
Pb^{55+} + Ta	Part. Beam-Matter Interaction	450−1363 keV	E/T	1939
Pb^{56+} + Ta	Part. Beam-Matter Interaction	450−1363 keV	E/T	1939
Pb^{57+} + Ta	Part. Beam-Matter Interaction	450−1363 keV	E/T	1939
Pb^{58+} + Ta	Part. Beam-Matter Interaction	450−1363 keV	E/T	1939
Pb^{81+} + Au	Part. Beam-Matter Interaction	33 TeV	Th	1955
Pb^{82+} + Au	Part. Beam-Matter Interaction	33 TeV	Th	1955
U^+ + Fe	Part. Beam-Matter Interaction	500−950 MeV/u	Exp	1969
U^+ + Cu	Part. Beam-Matter Interaction	500−950 MeV/u	Exp	1969
U^+ + SS	Part. Beam-Matter Interaction	500−950 MeV/u	Exp	1969
U^+ + A	Part. Beam-Matter Interaction		Th	1971
U^{50+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th	1997
U^{90+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th	1997
e + Al_2O_3	Part. Beam-Matter Interaction	200−350 eV	Exp	1942
e + PET	Part. Beam-Matter Interaction	500−1000 eV	Exp	1951
e + $C_{10}H_8O_4$	Part. Beam-Matter Interaction	500−1000 eV	Exp	1951
e + Si	Part. Beam-Matter Interaction	100−800 MeV	Th	1954
e + Si	Part. Beam-Matter Interaction	0−200 keV	Th	1979
e + A	Part. Beam-Matter Interaction	0.05−30 keV	Th	1980
e + Si	Part. Beam-Matter Interaction	0.1−30 keV	Exp	1993
e + Au	Part. Beam-Matter Interaction	0.1−30 keV	Exp	1993
e + A	Part. Beam-Matter Interaction	10^2-10^4 eV	E/T	1994
e + H_2O	Part. Beam-Matter Interaction	10^{-2}-1 MeV	E/T	1999
$H_2{}^{2+}$ + H	Part. Beam-Matter Interaction	150−1000 keV/amu	E/T	1953
$H_2{}^+$ + Si	Part. Beam-Matter Interaction	900−1500 keV	Exp	1976
$H_2{}^+$ + Au	Part. Beam-Matter Interaction	1−10 keV/u	E/T	1987
D^+ + Au	Part. Beam-Matter Interaction	0.16−5 keV	Exp	1986
$He_2{}^{4+}$ + H	Part. Beam-Matter Interaction	150−1000 keV/amu	E/T	1953
$N_2{}^+$ + C	Part. Beam-Matter Interaction	0.3−1.8 MeV/u	Th	1949
$O_2{}^+$ + C	Part. Beam-Matter Interaction	0.3−1.8 MeV/u	Th	1949
$C_{60}{}^+$ + C	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$C_{60}{}^+$ + Al	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$C_{60}{}^+$ + Si	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$C_{60}{}^+$ + C	Part. Beam-Matter Interaction	0.3−1.8 MeV/u	Th	1949
$Li_2{}^{6+}$ + H	Part. Beam-Matter Interaction	150−1000 keV/amu	E/T	1953
$Li_2{}^+$ + C	Part. Beam-Matter Interaction	1−6 MeV	Exp	1966
$C_{17}{}^+$ + C	Part. Beam-Matter Interaction	1.5−40 keV/u	E/T	1940
$C_{20}{}^+$ + C	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$C_{20}{}^+$ + Al	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$C_{20}{}^+$ + Si	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$C_{28}{}^+$ + C	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$C_{28}{}^+$ + Al	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$C_{28}{}^+$ + Si	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947

$\mathbf{C_{36}}^+$ **+ C**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_{36}}^+$ **+ Al**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_{36}}^+$ **+ Si**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_2}^+$ **+ C**	Part. Beam-Matter Interaction	1.5−40 keV/u	E/T	1940
$\mathbf{C_2}^+$ **+ C**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_2}^+$ **+ Al**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_2}^+$ **+ Si**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_2}^+$ **+ C**	Part. Beam-Matter Interaction	1−6 MeV	Exp	1966
$\mathbf{C_2}^+$ **+ Si**	Part. Beam-Matter Interaction	900−2200 keV/atom	E/T	1984
$\mathbf{C_3}^+$ **+ C**	Part. Beam-Matter Interaction	1.5−40 keV/u	E/T	1940
$\mathbf{C_3}^+$ **+ C**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_3}^+$ **+ Al**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_3}^+$ **+ Si**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_3}^+$ **+ C**	Part. Beam-Matter Interaction	1−6 MeV	Exp	1966
$\mathbf{C_5}^+$ **+ C**	Part. Beam-Matter Interaction	1.5−40 keV/u	E/T	1940
$\mathbf{C_5}^+$ **+ C**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_5}^+$ **+ Al**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_5}^+$ **+ Si**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_8}^+$ **+ C**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_8}^+$ **+ Al**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_8}^+$ **+ Si**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_{10}}^+$ **+ C**	Part. Beam-Matter Interaction	1.5−40 keV/u	E/T	1940
$\mathbf{C_{10}}^+$ **+ C**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_{10}}^+$ **+ Al**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_{10}}^+$ **+ Si**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{B_2}^+$ **+ C**	Part. Beam-Matter Interaction	10−5000 keV/u	Th	1937
$\mathbf{C_4}^+$ **+ C**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_4}^+$ **+ Al**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_4}^+$ **+ Si**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{B_3}^+$ **+ C**	Part. Beam-Matter Interaction	10−5000 keV/u	Th	1937
$\mathbf{C_7}^+$ **+ C**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_7}^+$ **+ Al**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_7}^+$ **+ Si**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_6}^+$ **+ C**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_6}^+$ **+ Al**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_6}^+$ **+ Si**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{B_4}^+$ **+ C**	Part. Beam-Matter Interaction	10−5000 keV/u	Th	1937
$\mathbf{B_5}^+$ **+ C**	Part. Beam-Matter Interaction	10−5000 keV/u	Th	1937
$\mathbf{B_6}^+$ **+ C**	Part. Beam-Matter Interaction	10−5000 keV/u	Th	1937
$\mathbf{B_{14}}^+$ **+ C**	Part. Beam-Matter Interaction	10−5000 keV/u	Th	1937
$\mathbf{C_{13}}^+$ **+ C**	Part. Beam-Matter Interaction	1.5−40 keV/u	E/T	1940
$\mathbf{C_{21}}^+$ **+ C**	Part. Beam-Matter Interaction	1.5−40 keV/u	E/T	1940
$\mathbf{C_{50}}^+$ **+ C**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_{50}}^+$ **+ Al**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
$\mathbf{C_{50}}^+$ **+ Si**	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th	1947
A + H Z= 10-92	Part. Beam-Matter Interaction	10−1000 MeV/u	Th	1973
A + He Z= 10-92	Part. Beam-Matter Interaction	10−1000 MeV/u	Th	1973

2.7 Interactions of Atomic Particles with Fields

H	Atom Field Interaction		Th	2014
$\mathbf{H}^-$	Atom Field Interaction		Th	2015
$\mathbf{H}^+$ **+ Ne + h**ν	Atom Field Interaction	2−20 keV	Th	2019
$\mathbf{H}^+$ **+ Ar + h**ν	Atom Field Interaction	2−20 keV	Th	2019
H	Atom Field Interaction	225−313 m/s	Exp	2020

H	Atom Field Interaction	10^{13}-10^{16} W/cm^2	Th	2028
H	Atom Field Interaction	5×10^{13}-5×10^{14} W/cm^2	Th	2036
H	Atom Field Interaction	13.6−40 eV	Th	2040
$\mathbf{H^+}$ + **He**	Atom Field Interaction	2.5 MeV	Th	2041
H	Atom Field Interaction	1 a.u.	Th	2044
H	Atom Field Interaction	10^5-10^8 T	Th	2048
H + H	Atom Field Interaction	2−200 keV	E/T	2049
$\mathbf{H^*}$ + $\mathbf{H_2}$	Atom Field Interaction	2−200 keV	E/T	2049
H	Atom Field Interaction	10 kV/cm	Th	2050
H	Atom Field Interaction	3000−12,000 K	Th	2053
H	Atom Field Interaction	1−1000 a.u.	Th	2061
H	Atom Field Interaction		Exp	2071
H	Atom Field Interaction		Th	2072
$\mathbf{H^+}$ + **H**	Atom Field Interaction	1−400 keV	Th	2074
He	Atom Field Interaction		Th	2003
He	Atom Field Interaction	390−780 nm	Th	2005
He	Atom Field Interaction		Th	2015
He	Atom Field Interaction	76−99 eV	Th	2017
He + He	Atom Field Interaction	5−20 mW/cm^2	Exp	2023
He + YbF	Atom Field Interaction	10^{-3}-1 K	Th	2024
He	Atom Field Interaction	10^7-5×10^8 T	Th	2033
He	Atom Field Interaction	0-10^7 T	Th	2057
He	Atom Field Interaction		Th	2058
He	Atom Field Interaction	10^7 T	Th	2065
Li	Atom Field Interaction	10 GHz	E/T	2007
Li + Cs	Atom Field Interaction	10^{-7} cm^{-1}	Th	2022
Li	Atom Field Interaction		Th	2025
Li	Atom Field Interaction	0-10^{-5} a.u.	Th	2031
Li + Cs	Atom Field Interaction	0-10^{-5} a.u.	Th	2031
Li	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Li	Atom Field Interaction		E/T	2051
$\mathbf{Li^*}$	Atom Field Interaction		E/T	2051
Li	Atom Field Interaction	0−0.0025 a.u.	Th	2060
Li	Atom Field Interaction	10^7 T	Th	2065
Li + Na	Atom Field Interaction	0−1200 G	Th	2075
Be	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Be	Atom Field Interaction	10^7 T	Th	2065
B	Atom Field Interaction	10^7-5×10^8 T	Th	2033
B	Atom Field Interaction	10^7 T	Th	2065
$\mathbf{C^{6+}}$ + **He**	Atom Field Interaction	100 MeV/u	Th	2013
C	Atom Field Interaction	10^7-5×10^8 T	Th	2033
$\mathbf{C^{3+}}$	Atom Field Interaction		Th	2046
C	Atom Field Interaction	10^7 T	Th	2065
N	Atom Field Interaction	10^7-5×10^8 T	Th	2033
N	Atom Field Interaction	10^7 T	Th	2065
O	Atom Field Interaction	10^7-5×10^8 T	Th	2033
$\mathbf{O^{5+}}$	Atom Field Interaction		Th	2046
O	Atom Field Interaction	10^7 T	Th	2065
F	Atom Field Interaction	10^7-5×10^8 T	Th	2033
F	Atom Field Interaction	10^7 T	Th	2065
Ne	Atom Field Interaction		Exp	2011
$\mathbf{Ne^+}$	Atom Field Interaction		Exp	2011
Ne	Atom Field Interaction	10^7-5×10^8 T	Th	2033
$\mathbf{Ne^{7+}}$	Atom Field Interaction		Th	2046
Ne	Atom Field Interaction	0−250 V/cm	E/T	2052
$\mathbf{Ne^+}$	Atom Field Interaction	25,000−45,000 K	Exp	2059
Ne	Atom Field Interaction	10^7 T	Th	2065

Na	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Na	Atom Field Interaction	10^7 T	Th	2065
Na + He	Atom Field Interaction	528 nm	E/T	2069
Na* + He	Atom Field Interaction	528 nm	E/T	2069
Mg	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Mg^{9+}	Atom Field Interaction		Th	2046
Mg	Atom Field Interaction	10^7 T	Th	2065
Al	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Al^{+}	Atom Field Interaction	$0-0.6$ a.u.	Th	2064
Al	Atom Field Interaction	10^7 T	Th	2065
Si	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Si^{2+}	Atom Field Interaction	$0-0.6$ a.u.	Th	2064
Si	Atom Field Interaction	10^7 T	Th	2065
P	Atom Field Interaction	10^7-5×10^8 T	Th	2033
P^{3+}	Atom Field Interaction	$0-0.6$ a.u.	Th	2064
P	Atom Field Interaction	10^7 T	Th	2065
S	Atom Field Interaction	10^7-5×10^8 T	Th	2033
S^{13+}	Atom Field Interaction		Th	2046
S^{4+}	Atom Field Interaction	$0-0.6$ a.u.	Th	2064
S	Atom Field Interaction	10^7 T	Th	2065
Cl	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Cl	Atom Field Interaction	10^7 T	Th	2065
Ar	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Ar	Atom Field Interaction	$0.25-2\times10^{14}$ W/cm^2	Th	2037
Ar	Atom Field Interaction	10^7 T	Th	2065
Ar	Atom Field Interaction		Exp	2071
K	Atom Field Interaction	10^7-5×10^8 T	Th	2033
K	Atom Field Interaction	10^7 T	Th	2065
Ca^{+}	Atom Field Interaction	$0-6$ G	Exp	2021
Ca	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Ca^{17+}	Atom Field Interaction		Th	2046
Ca	Atom Field Interaction	10^7 T	Th	2065
Sc	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Sc	Atom Field Interaction	10^7 T	Th	2065
Ti	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Ti	Atom Field Interaction	10^7 T	Th	2065
V	Atom Field Interaction	10^7-5×10^8 T	Th	2033
V	Atom Field Interaction	10^7 T	Th	2065
Cr	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Cr^{21+}	Atom Field Interaction		Th	2046
Cr	Atom Field Interaction	10^7 T	Th	2065
Mn	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Mn	Atom Field Interaction	10^7 T	Th	2065
Fe	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Fe^{+}	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Fe^{2+}	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Fe^{3+}	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Fe^{4+}	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Fe^{5+}	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Fe^{6+}	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Fe^{7+}	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Fe^{8+}	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Fe^{9+}	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Fe^{10+}	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Fe^{11+}	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Fe^{12+}	Atom Field Interaction	10^7-5×10^8 T	Th	2033
Fe^{13+}	Atom Field Interaction	10^7-5×10^8 T	Th	2033

Fe^{14+}	Atom Field Interaction	10^7-5 $\times$ 10^8 T	Th	2033
Fe^{15+}	Atom Field Interaction	10^7-5 $\times$ 10^8 T	Th	2033
Fe^{16+}	Atom Field Interaction	10^7-5 $\times$ 10^8 T	Th	2033
Fe^{17+}	Atom Field Interaction	10^7-5 $\times$ 10^8 T	Th	2033
Fe^{18+}	Atom Field Interaction	10^7-5 $\times$ 10^8 T	Th	2033
Fe^{19+}	Atom Field Interaction	10^7-5 $\times$ 10^8 T	Th	2033
Fe^{20+}	Atom Field Interaction	10^7-5 $\times$ 10^8 T	Th	2033
Fe^{21+}	Atom Field Interaction	10^7-5 $\times$ 10^8 T	Th	2033
Fe^{22+}	Atom Field Interaction	10^7-5 $\times$ 10^8 T	Th	2033
Fe^{23+}	Atom Field Interaction	10^7-5 $\times$ 10^8 T	Th	2033
Fe^{24+}	Atom Field Interaction	10^7-5 $\times$ 10^8 T	Th	2033
Fe	Atom Field Interaction	10^7 T	Th	2065
Fe^{+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{2+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{3+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{4+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{5+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{6+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{7+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{8+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{9+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{10+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{11+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{12+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{13+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{14+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{15+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{16+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{17+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{18+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{19+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{20+}	Atom Field Interaction	10^7 T	Th	2065
Fe^{21+}	Atom Field Interaction	10^7 T	Th	2065
Ni^{25+}	Atom Field Interaction		Th	2046
Zn^{27+}	Atom Field Interaction		Th	2046
Ge^{29+}	Atom Field Interaction		Th	2046
Rb	Atom Field Interaction	0−6 mT	E/T	2008
Rb	Atom Field Interaction	1.356 GHz	Exp	2063
Rb^{*}	Atom Field Interaction	1.356 GHz	Exp	2063
Rb	Atom Field Interaction	400−500 atm	Exp	2076
Sn	Atom Field Interaction	11,000 K	Exp	2054
Sn^{+}	Atom Field Interaction	11,000 K	Exp	2054
Xe^{+}	Atom Field Interaction	(5−30)$\times10^3$ K	E/T	2010
Xe^{2+}	Atom Field Interaction	(5−30)$\times10^3$ K	E/T	2010
Xe + Xe	Atom Field Interaction	293−373 K	Exp	2068
Cs	Atom Field Interaction	0-10^{-5} a.u.	Th	2031
Bi + He	Atom Field Interaction	0.5 K	E/T	2067
hν + H	Atom Field Interaction		Th	2006
hν + H^{*}	Atom Field Interaction		Th	2006
hν + NH^{+}	Atom Field Interaction	1.55 eV	Exp	2047
hν + ND^{+}	Atom Field Interaction	1.55 eV	Exp	2047
e + H	Atom Field Interaction	0−10 a.u.	Th	2004
e + He	Atom Field Interaction	2−25 eV	Th	2018
e + He^{+}	Atom Field Interaction	2−25 eV	Th	2018
e + Ba^{+}	Atom Field Interaction	0−250 G	Exp	2032
e + Ba^{+}	Atom Field Interaction	0 eV	Exp	2045
e + Ba^{+*}	Atom Field Interaction	0 eV	Exp	2045

$\mathbf{H_2}^+$	Atom Field Interaction	1.3×10^{15} W/cm^2	Exp	2016
$\mathbf{H_2}$	Atom Field Interaction	76−99 eV	Th	2017
$\mathbf{H_2}^+$	Atom Field Interaction	5×10^{13} W/cm^2	Th	2026
$\mathbf{H_2}$	Atom Field Interaction	10−20 eV	Th	2034
$\mathbf{H_2}^+$	Atom Field Interaction	10−20 eV	Th	2034
$\mathbf{H_2}^+$	Atom Field Interaction		Th	2035
$\mathbf{H_2}^+$	Atom Field Interaction	$1{-}3\times10^{14}$ W/cm^2	Th	2038
$\mathbf{H_2}^+$	Atom Field Interaction		Th	2042
$\mathbf{H_2}^+$	Atom Field Interaction		E/T	2043
$\mathbf{H_3}^+$	Atom Field Interaction	$0{-}4.4\times10^{13}$ G	Th	2030
$\mathbf{H_3}^{2+}$	Atom Field Interaction	0.0533 a.u. − 1064 nm	Th	2070
$\mathbf{D_2}^+$	Atom Field Interaction		E/T	2043
$\mathbf{HeH}^+$	Atom Field Interaction		Th	2009
$\mathbf{CH_4}$	Atom Field Interaction	1.4×10^{14} W/cm^2	Exp	2029
$\mathbf{N_2}$	Atom Field Interaction	$0.7{-}4\times10^{14}$ W/cm^2	Exp	2027
$\mathbf{N_2}^+$ **+ He**	Atom Field Interaction	10^{-8}-10^{0} cm^{-1}	Th	2056
NH + NH	Atom Field Interaction	10^{-6}-0.5 K	Th	2055
NO	Atom Field Interaction	325−330 nm	Exp	2039
$\mathbf{NO}^*$	Atom Field Interaction	325−330 nm	Exp	2039
NO	Atom Field Interaction	0−150 V/cm	Exp	2062
$\mathbf{O_2}$	Atom Field Interaction	$0.7{-}4\times10^{14}$ W/cm^2	Exp	2027
$\mathbf{Cs_2}$	Atom Field Interaction	0−50 G	Th	2066
$\mathbf{C_2H_6}$	Atom Field Interaction	1.4×10^{14} W/cm^2	Exp	2029
$\mathbf{K_2}$	Atom Field Interaction	0−50 G	Th	2066
$\mathbf{C_3H_8}$	Atom Field Interaction	1.4×10^{14} W/cm^2	Exp	2029
$\mathbf{Na_2}$	Atom Field Interaction	0−50 G	Th	2066
NaK	Atom Field Interaction	0−50 G	Th	2066
CaH + CaH	Atom Field Interaction	10^{-6}-0.5 K	Th	2055
CsCl	Atom Field Interaction	0−50 G	Th	2066
MgH + MgH	Atom Field Interaction	10^{-6}-0.5 K	Th	2055
RbF	Atom Field Interaction	0−50 G	Th	2066
RbCl	Atom Field Interaction	0−50 G	Th	2066
RbBr	Atom Field Interaction	0−50 G	Th	2066
RbI	Atom Field Interaction	0−50 G	Th	2066
$\mathbf{Rb_2}$	Atom Field Interaction	0−50 G	Th	2066
YbF	Atom Field Interaction	10^{-3}-1 K	Th	2024
KF	Atom Field Interaction	0−50 G	Th	2066
Kli	Atom Field Interaction	0−50 G	Th	2066
RbLi	Atom Field Interaction	0−50 G	Th	2066
CsF	Atom Field Interaction	0−50 G	Th	2066
CaF	Atom Field Interaction		Th	2073
H Z= 1-92	Atom Field Interaction		Th	2012

Chapter 3

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3.1 Structure and Spectra

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$^{82}\mathbf{Kr}$	Energy Levels, Wavelengths	Exp
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Kr	Energy Levels, Wavelengths	Exp

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Cr^{2+}	Energy Levels, Wavelengths	Exp

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$\mathbf{Si}^{12+}$	Energy Levels, Wavelengths	Th
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$^{6}\mathbf{Li}$	Energy Levels, Wavelengths	Th
$^{7}\mathbf{Li}$	Energy Levels, Wavelengths	Th
$^{8}\mathbf{Li}$	Energy Levels, Wavelengths	Th
$^{9}\mathbf{Li}$	Energy Levels, Wavelengths	Th
$^{11}\mathbf{Li}$	Energy Levels, Wavelengths	Th
Li	Energy Levels, Wavelengths	Th
$^{7}\mathbf{Be}^{+}$	Energy Levels, Wavelengths	Th
$^{9}\mathbf{Be}^{+}$	Energy Levels, Wavelengths	Th
$^{10}\mathbf{Be}^{+}$	Energy Levels, Wavelengths	Th
$^{11}\mathbf{Be}^{+}$	Energy Levels, Wavelengths	Th
$\mathbf{Be}^{+}$	Energy Levels, Wavelengths	Th

45. T. R. DeVore, D. N. Crosby, E. G. Myers
Improved Measurement of the 1s2s $^{1}\mathbf{S}_0$ – 1s2p $^{3}\mathbf{P}_1$ Interval in Heliumlike Silicon
Phys. Rev. Lett. 100, 243001 (2008)

$^{28}\mathbf{Si}^{12+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Si}^{12+}$	Energy Levels, Wavelengths	Exp

46. E. De Filippo, G. Lanzanò, H. Rothard, C. Volant
Three-Electron Auger Process from Beam-Foil Excited Multiply Charged Ions
Phys. Rev. Lett. 100, 233202 (2008)

C^{3+} Energy Levels, Wavelengths Exp

47. L. Argenti
Rydberg and Autoionizing Triplet States in Helium up to the N=5 Threshold
At. Data Nucl. Data Tables 94, 903-980 (2008)

He Energy Levels, Wavelengths Th

48. L.-H. Hao, G. Jiang, S.-Q. Song, F. Hu
Relativistic Multi-Configuration Calculations of Kα and Kβ X-ray Transitions for Highly Ionized Mo Ions
At. Data Nucl. Data Tables 94, 739-757 (2008)

$Mo^{32+ -- 40+}$ Energy Levels, Wavelengths Th

49. M. J. Vilkas, Y. Ishikawa, E. Träbert
Relativistic Many-Body Møller-Plesset Perturbation Theory Calculations of the Energy Levels and Transition Rates in Na-like to P-like Xe Ions
At. Data Nucl. Data Tables 94, 650-700 (2008)

$Xe^{39+ -- 43+}$ Energy Levels, Wavelengths Th

50. P. Bogdanovich, R. Karpuškienė
Ab Initio Oscillator Strengths and Transition Probabilities in Oxygen-like Cr XVII
At. Data Nucl. Data Tables 94, 623-649 (2008)

Cr^{16+} Energy Levels, Wavelengths Th

51. M. Raineri, C. Lagorio, S. Padilla, M. Gallardo, J. Reyna Almandos
Weighted Oscillator Strengths for the Xe IV Spectrum
At. Data Nucl. Data Tables 94, 140-159 (2008)

Xe^{3+} Energy Levels, Wavelengths E/T

52. E. Landi, A. K. Bhatia
Atomic Data and Spectral Line Intensities for S XIII
At. Data Nucl. Data Tables 94, 1-37 (2008)

S^{12+} Energy Levels, Wavelengths Th

53. G. W. F. Drake, Z.-C. Yan
High-Precision Spectroscopy as a Test of Quantum Electrodynamics in Light Atomic Systems
Can. J. Phys. 86, 45-54 (2008)

^4He Energy Levels, Wavelengths Th
He Energy Levels, Wavelengths Th

54. J. P. Santos, M. C. Martins, A. M. Costa, P. Indelicato, F. Parente
X-ray Spectra Emitted by Cl^{14+} Ions in ECRIS Plasmas
Vacuum 82, 1522-1524 (2008)

Cl^{14+} Energy Levels, Wavelengths Th

55. U. Roy, Y. K. Ho
Computation of Doubly-Excited $1s^2 3l3l'\ ^1P^\circ$ and $^1F^\circ$ States in Beryllium-like Ions
Indian J. Phys. 82-4, 387-401 (2008)

Be Z= 5-10	Energy Levels, Wavelengths	Th

56. P. J. Mohr, B. N. Taylor, D. B. Newell
CODATA Recommended Values of the Fundamental Physical Constants: 2006
Rev. Mod. Phys. 80, 633-730 (2008)

^{1}**H**	Energy Levels, Wavelengths	E/T
H	Energy Levels, Wavelengths	E/T
He	Energy Levels, Wavelengths	E/T
D	Energy Levels, Wavelengths	E/T

57. W. D. Chen, J. Xiao, Y. Shen, Y. Q. Fu, F. C. Meng, C. Y. Chen, Y. Zou, R. Hutton
High Precision High Voltage Divider and Its Application to Electron Beam Ion Traps
Rev. Sci. Instrum. 79, 123304 (2008)

Xe^{45+}	Energy Levels, Wavelengths	Exp
Xe^{51+}	Energy Levels, Wavelengths	Exp

58. M. E. Hanni, J. A. Keele, S. R. Lundeen, W. G. Sturrus
Microwave Spectroscopy of High-L n=10 Rydberg States of Argon
Phys. Rev. A 78, 062510 (2008)

Ar	Energy Levels, Wavelengths	Exp
Ar^{+}	Energy Levels, Wavelengths	Exp

59. J. L. Sanz-Vicario, J. C. Cardona, E. Lindroth
Outer-Shell Photodetachment of the Metastable Mg^- [core]3s3p^2 and Ca^- [core]4s4p^2 $^4P^e$ States
Phys. Rev. A 78, 053411 (2008)

Mg^{-}	Energy Levels, Wavelengths	Th
Ca^{-}	Energy Levels, Wavelengths	Th

60. M. Puchalski, K. Pachucki
Relativistic, QED, and Finite Nuclear Mass Corrections for Low-Lying States of Li and Be^+
Phys. Rev. A 78, 052511 (2008)

^{6}**Li**	Energy Levels, Wavelengths	Th
^{7}**Li**	Energy Levels, Wavelengths	Th
^{8}**Li**	Energy Levels, Wavelengths	Th
^{9}**Li**	Energy Levels, Wavelengths	Th
^{11}**Li**	Energy Levels, Wavelengths	Th
Li	Energy Levels, Wavelengths	Th
$^{7}Be^{+}$	Energy Levels, Wavelengths	Th
$^{9}Be^{+}$	Energy Levels, Wavelengths	Th
$^{10}Be^{+}$	Energy Levels, Wavelengths	Th
$^{11}Be^{+}$	Energy Levels, Wavelengths	Th
Be^{+}	Energy Levels, Wavelengths	Th

61. P. Bogdanovich, O. Rancova
Quasirelativistic Approach for Ab Initio Study of Highly Charged Ions
Phys. Scr. 78, 045301 (2008)

Ne^{4+}	Energy Levels, Wavelengths	Th
Fe^{20+}	Energy Levels, Wavelengths	Th
Xe^{42+}	Energy Levels, Wavelengths	Th

62. J. Y. Zhang, J. Mitroy, K. Varga
Development of a Confined Variational Method for Elastic Scattering
Phys. Rev. A 78, 042705 (2008)

H^-	Energy Levels, Wavelengths	Th

63. Y. Ishikawa, M. J. Vilkas
Relativistic Many-Body Calculations of Excited-State Energies and Transition Wavelengths for Six-Valence-Electron Sulfurlike Ions
Phys. Rev. A 78, 042501 (2008)

S Z= 26-32	Energy Levels, Wavelengths	Th

64. M. A. Baig, S. Mahmood, R. Mumtaz, M. Rafiq, M. A. Kalyar, S. Hussain, R. Ali
Oscillator Strength Measurements of the $3p^5(^2P_{1/2})nd'[3/2]_2$ and $[5/2]_{2,3}$ Autoionizing Resonances in Argon
Phys. Rev. A 78, 032524 (2008)

Ar	Energy Levels, Wavelengths	Exp

65. S. Bhattacharyya, T. K. Mukherjee, J. K. Saha, P. K. Mukherjee
Ritz Variational Calculation for Two-Electron-One-Photon Transitions in Helium
Phys. Rev. A 78, 032505 (2008)

He	Energy Levels, Wavelengths	Th

66. A. E. Kramida, A. N. Ryabtsev, J. O. Ekberg, I. Kink, S. Mannervik, I. Martinson
Additions to the Spectrum and Energy Levels and a Critical Compilation of Helium-like and Hydrogen-like Boron, B IV and B V
Phys. Scr. 78, 025302 (2008)

$^{11}B^{3+}$	Energy Levels, Wavelengths	E/T
B^{3+}	Energy Levels, Wavelengths	E/T
$^{11}B^{3+--4+}$	Energy Levels, Wavelengths	E/T
B^{3+--4+}	Energy Levels, Wavelengths	E/T
$^{10}B^{4+}$	Energy Levels, Wavelengths	E/T
$^{11}B^{4+}$	Energy Levels, Wavelengths	E/T
B^{4+}	Energy Levels, Wavelengths	E/T

67. A. E. Kramida, A. N. Ryabtsev, J. O. Ekberg, I. Kink, S. Mannervik, I. Martinson
Additions to the Spectrum and Energy Levels and Critical Compilation of Doubly Ionized Boron, B III
Phys. Scr. 78, 025301 (2008)

B^{2+}	Energy Levels, Wavelengths	E/T

68. Günay Başar, Gönül Başar, S. B. Bayram, S. Kröger
High-Resolution Laser Spectroscopy of the Hyperfine Structure of High-Lying Levels of Nb I
Phys. Scr. 78, 015303 (2008)

Nb	Energy Levels, Wavelengths	Exp

69. J.-T. Hsiao, L.-R. Wang, H.-L. Sun, S.-F. Lin, C.-L. Lu, K.-N. Huang
Photoionization Processes of the Beryllium Atom
Phys. Rev. A 78, 013411 (2008)

Be	Energy Levels, Wavelengths	Th

70. A. Derevianko, S. G. Porsev, K. Beloy
Convergence of All-Order Many-Body Methods: Coupled-Cluster Study for Li
Phys. Rev. A 78, 010503 (2008)

Li	Energy Levels, Wavelengths	Th

71. G. V. Brown, S. B. Hansen, E. Träbert, P. Beiersdorfer, K. Widmann, H. Chen, H. K. Chung, J. H. T. Clementson, M. F. Gu, D. B. Thorn
Investigation of the $2p_{3/2}$-$3d_{5/2}$ Line Emission of Au^{53+}–Au^{69+} for Diagnosing High Energy Density Plasmas
Phys. Rev. E 77, 066406 (2008)

$Au^{53+-69+}$	Energy Levels, Wavelengths	E/T
Au^{59+}	Energy Levels, Wavelengths	E/T
Au^{65+}	Energy Levels, Wavelengths	E/T
Au^{68+}	Energy Levels, Wavelengths	E/T
Au^{69+}	Energy Levels, Wavelengths	E/T

72. M. Maslov, M. J. Brunger, P. J. O. Teubner, O. Zatsarinny, K. Bartschat, D. Fursa, I. Bray, R. P. McEachran
Electron-Impact Excitation of the $(5d^{10}6s)^2S_{1/2} \rightarrow (5d^{10}6p)^2P_{1/2,3/2}$ Resonance Transitions in Gold Atoms
Phys. Rev. A 77, 062711 (2008)

Au^-	Energy Levels, Wavelengths	Exp

73. J. D. Wright, T. J. Morgan, L. Li, Q. Gu, J. L. Knee, I. D. Petrov, V. L. Sukhorukov, H. Hotop
Photoionization Spectroscopy of Even-Parity Autoionizing Rydberg States of Argon: Experimental and Theoretical Investigation of Fano Profiles and Resonance Widths
Phys. Rev. A 77, 062512 (2008)

Ar	Energy Levels, Wavelengths	Exp

74. M. Stanke, J. Komasa, D. Kędziera, S. Bubin, L. Adamowicz
Three Lowest S States of $^9Be^+$ Calculated with Including Nuclear Motion and Relativistic and QED Corrections
Phys. Rev. A 77, 062509 (2008)

$^9Be^+$	Energy Levels, Wavelengths	Th
Be^+	Energy Levels, Wavelengths	Th

75. K. Jänkälä, S. Urpelainen, M. Huttula, S. Fritzsche, S. Heinäsmäki, S. Aksela, H. Aksela
Inner-Shell 2p Photoionization and Auger Decay of Atomic Silicon
Phys. Rev. A 77, 062504 (2008)

Si	Energy Levels, Wavelengths	E/T

76. I. Sakho, A. Konte, A. S. Ndao, M. Biaye, A. Wague
Investigation of $2snp^{\pm}\ {}^{1,3}P^{\circ}$ Resonances of Two-Electron Systems Using the Screening Constant by Unit Nuclear Charge Method
Phys. Scr. 77, 055303 (2008)

He Z= 2-10	Energy Levels, Wavelengths	Th

77. M. Oura, Y. Senba, H. Ohashi
Resonant Enhancement of Photoemission Leading to the Ne^+ $[2p^2](^1D)3p$ ^2P State Across the $[1s2p](^3P)3p^2$ ^1P Double-Excitation Resonance of Ne
Phys. Rev. A 77, 054702 (2008)

Ne	Energy Levels, Wavelengths	Exp

78. A. K. Bhatia
Applications of the Hybrid Theory to the Scattering of Electrons from He^+ and Li^{2+} and Resonances in These Systems
Phys. Rev. A 77, 052707 (2008)

He	Energy Levels, Wavelengths	Th
Li^+	Energy Levels, Wavelengths	Th

79. Y. Ishikawa, M. J. Vilkas
Relativistic R-Matrix Close-Coupling Method Based on the Effective Many-Body Hamiltonian: Benchmarks on the Electron-Impact Excitations of the Kr^{6+} Ion
Phys. Rev. A 77, 052701 (2008)

Kr^{5+--6+}	Energy Levels, Wavelengths	Th

80. K. T. Cheng, M. H. Chen, W. R. Johnson
Hyperfine Quenching of the 2s2p $^3P_0$ State of Berylliumlike Ions
Phys. Rev. A 77, 052504 (2008)

Be Z= 6-92	Energy Levels, Wavelengths	Th

81. E. L. Snow, S. R. Lundeen
Determination of Dipole and Quadrupole Polarizabilities of Mg^+ by Fine-Structure Measurements in High-L n=17 Rydberg States of Magnesium
Phys. Rev. A 77, 052501 (2008)

Mg^+	Energy Levels, Wavelengths	Exp

82. W. R. Johnson, U. I. Safronova, A. Derevianko, M. S. Safronova
Relativistic Many-Body Calculation of Energies, Lifetimes, Hyperfine Constants, and Polarizabilities in ^7Li
Phys. Rev. A 77, 022510 (2008)

^7Li	Energy Levels, Wavelengths	Th
Li	Energy Levels, Wavelengths	Th

83. G. Gasaneo, L. U. Ancarani
Use of Double-Bound Three-Body Coulomb Distorted-Wave-like Basis Sets for Two-Electron Wave Functions
Phys. Rev. A 77, 012705 (2008)

He Z= 1-3	Energy Levels, Wavelengths	Th

84. C. S.-C. Yang, E. Brown, U. Hommerich, S. B. Trivedi, A. C. Samuels, A. P. Snyder
Mid-Infrared Laser-Induced Breakdown Spectroscopy Emissions from Alkali Metal Halides
Appl. Spectrosc. 62, 714-716 (2008)

Li	Energy Levels, Wavelengths	Exp
Na	Energy Levels, Wavelengths	Exp
K	Energy Levels, Wavelengths	Exp
Rb	Energy Levels, Wavelengths	Exp

85. G. W. F. Drake, Z.-C. Yan
Studies of Light Halo Nuclei from Atomic Isotope Shifts
Adv. Quantum Chem. 53, 37-56 (2008)

He Z= 2-6	Energy Levels, Wavelengths	Th
H	Energy Levels, Wavelengths	Th
He	Energy Levels, Wavelengths	Th
Li	Energy Levels, Wavelengths	Th

86. Z.-W. Wang, Y.-N. Wang, M.-H. Hu, X.-R. Li, Y. Liu
Wavelength and Oscillator Strength of Dipole Transition $1s^22p$–$1s^2nd$ for Mn^{22+} Ion
Sci. China, Ser. G 51, 1633-1637 (2008)

Mn^{22+}	Energy Levels, Wavelengths	Th

87. C. Chen
Ionization Potentials and Quantum Defects of $1s^2np\ ^2P$ Rydberg States of Lithium Atom
Commun. Theor. Phys. 50, 733-737 (2008)

Li	Energy Levels, Wavelengths	Th

88. J.-H. Yang, P. Li, J.-P. Zhang, H.-L. Li
Relativistic Calculations for Be-like Iron
Commun. Theor. Phys. 50, 468-472 (2008)

Fe^{22+}	Energy Levels, Wavelengths	Th

89. F. Hu, G. Jiang, W. Hong, L. H. Hao
Wavelengths, Transition Probabilities, Line Strengths and Oscillator Strengths for the Kα and Kβ X-ray Transitions in Ni XIX through Ni XXVII
Eur. Phys. J. D 49, 293-296 (2008)

$Ni^{18+-26+}$	Energy Levels, Wavelengths	Th

90. P. Mandelbaum, J. L. Schwob
Excitation-Autoionization Cross Sections and Rate Coefficients for Ga-like Ions
Eur. Phys. J. D 49, 173-184 (2008)

Ga Z= 36-92	Energy Levels, Wavelengths	Th

91. K. Wilhelm, W. Curdt, I. E. Dammasch, D. M. Hassler
Comment on "Energy Levels and Spectral Lines of Ne VIII"
Eur. Phys. J. D 47, 325 (2008)

Ne^{7+}	Energy Levels, Wavelengths	Exp

92. I. Sakho, A. S. Ndao, M. Biaye, A. Wague
Screening Constant by Unit Nuclear Charge Calculations for $(ns^2)^1S^e$, $(np^2)^1D^e$ and $(Nsnp)^1P^\circ$ Excited States of He-like Systems
Eur. Phys. J. D 47, 37-44 (2008)

He	Energy Levels, Wavelengths	Th

93. Z. H. Yang, S. B. Du, X. T. Zeng, H. W. Chang, B. L. Zhang, K. X. Zhu, D. Y. Yu, X. H. Cai
Spectra for Electric-Dipole $\Delta n = 0$ Transitions in Highly Ionized Sulfur Ions
Eur. Phys. J. D 47, 33-36 (2008)

S^{8+}–$^{12+}$ Energy Levels, Wavelengths Exp

94. K. M. Aggarwal, F. P. Keenan
Comment on "Electron Collisional Excitation of Argon-like Ni XI Using the Breit-Pauli R-Matrix method" [Eur. Phys. J. D 42, 235-241 (2007)] – Electron Impact Excitation of Ni XI
Eur. Phys. J. D 46, 205-213 (2008)

Ni^{10+} Energy Levels, Wavelengths Th

95. D. C. Griffin, C. P. Ballance, D. M. Mitnik, J. C. Berengut
Dirac R-Matrix Calculations of Electron-Impact Excitation of Neon-like Krypton
J. Phys. B 41, 215201 (2008)

Kr^{26+} Energy Levels, Wavelengths Th

96. C. P. Ballance, D. C. Griffin
Intermediate-Coupling R-Matrix Calculations of Electron-Impact Excitation of Fe^{5+}
J. Phys. B 41, 195205 (2008)

Fe^{5+} Energy Levels, Wavelengths Th

97. D.-S. Kim, Y. S. Kim
Theoretical Photoionization Spectra in the UV Photon Energy Range for a Mg-like Al^{+} Ion
J. Phys. B 41, 165002 (2008)

Al^{+} Energy Levels, Wavelengths Th

98. A. E. Kingston, A. Hibbert
Transitions from the $3p^6 4s$ State of Ti IV
J. Phys. B 41, 155001 (2008)

Ti^{3+} Energy Levels, Wavelengths Th

99. S. Osmekhin, S. Fritzsche, A. N. Grum-Grzhimailo, M. Huttula, H. Aksela, S. Aksela
Angle-Resolved Study of the Ar $2p^{-1}_{1/2}3d$ Resonant Auger Decay
J. Phys. B 41, 145003 (2008)

Ar Energy Levels, Wavelengths Exp

100. H.-J. Kunze
On the Spectroscopic Measurements Used to Support the Postulate of States with Fractional Principal Quantum Numbers in Hydrogen
J. Phys. D 41, 108001 (2008)

H Energy Levels, Wavelengths Exp

101. I. D. Petrov, V. L. Sukhorukov, H. Hotop
Photoionization of Excited Ne*($2p^5 3p$, J = 3) Atoms Near Threshold
J. Phys. B 41, 065205 (2008)

Ne Energy Levels, Wavelengths Th

102. J. C. Cardona, J. L. Sanz-Vicario
Autoionizing States in Beryllium-like Atomic Systems Using Explicitly Correlated Coordinates
J. Phys. B 41, 055003 (2008)

Be	Energy Levels, Wavelengths	Th
Ne^{6+}	Energy Levels, Wavelengths	Th

103. L. Argenti, R. Moccia
Helium 2^3S Photoionization up to the N = 5 Threshold
J. Phys. B 41, 035002 (2008)

He	Energy Levels, Wavelengths	Th

104. K. M. Aggarwal, F. P. Keenan
Effective Collision Strengths for Inner Shell Transitions of Fe XVI
J. Phys. B 41, 015701 (2008)

Fe^{15+}	Energy Levels, Wavelengths	Th

105. S. V. Shestov, S. A. Bozhenkov, I. A. Zhitnik, S. V. Kuzin, A. M. Urnov, I. L. Beigman, F. F. Goryaev, I. Yu. Tolstikhina
Solar EUV Spectra Obtained During the SPIRIT Experiment onboard the CORONAS-F Satellite: A Catalog of Lines in the Range 176–207 Å
Astron. Lett. 34, 33-51 (2008)

Ar^{10+}	Energy Levels, Wavelengths	Exp
Ar^{13+}	Energy Levels, Wavelengths	Exp
$Ca^{13+--14+}$	Energy Levels, Wavelengths	Exp
$Fe^{11+--12+}$	Energy Levels, Wavelengths	Exp
Fe^{16+}	Energy Levels, Wavelengths	Exp
Ni^{14+}	Energy Levels, Wavelengths	Exp

106. X.-L. Wang, L.-T. Liu, X. Gao, C. Shen, J.-M. Li
Interesting Features of n^2D Rydberg Series Fine-Structure Splittings along the Sodium-like Isoelectronic Sequence
Chin. Phys. Lett. 25, 4244-4247 (2008)

Na Z= 11-16	Energy Levels, Wavelengths	Th

107. W.-C. Jiang, L.-F. Zhu, K.-Z. Xu
Inner Shell Excitations of Lithium Studied by Fast Electron Impact
Chin. Phys. Lett. 25, 3649-3651 (2008)

Li	Energy Levels, Wavelengths	Exp

108. M. Ge, L.-F. Zhu, C.-D. Liu, K.-Z. Xu
Optically Forbidden Excitations of 2s Electron of Neon Studied by Fast Electron Impact
Chin. Phys. Lett. 25, 3646-3648 (2008)

Ne	Energy Levels, Wavelengths	Exp

109. B. Qing, S.-H. Chen, X. Gao, J.-M. Li
Theoretical Study of Interesting Fine-Structure Splittings for $2^3P_{0,1,2}$ States Along Helium Isoelectronic Sequence
Chin. Phys. Lett. 25, 2448-2451 (2008)

He Z= 2-36	Energy Levels, Wavelengths	Th

110. Y. Wang, Y.-J. Zhou, L.-G. Jiao, K. Ratnavelu
Resonances in Electron Impact on Atomic Oxygen
Chin. Phys. Lett. 25, 2027-2029 (2008)

O^-	Energy Levels, Wavelengths	Th

111. X.-L. Wang, S.-H. Chen, X.-Y. Han, J.-M. Li
Fine-Structure Splittings of Nitrogen Isoelectronic Sequence: Competitions Among Spin-Orbit Interactions, Breit Interactions and Electron Correlations
Chin. Phys. Lett. 25, 903-905 (2008)

N Z= 7-13	Energy Levels, Wavelengths	Th
Ar^{11+}	Energy Levels, Wavelengths	Th
Ti^{15+}	Energy Levels, Wavelengths	Th

112. L.-P. Li, Q.-L. Gu, J. L. Knee, J. D. Wright, J. M. DiSciacca, T. J. Morgan
Two-Color Photoexcitation of Rydberg States via an Electric Quadrupole Transition
J. Opt. Soc. Am. B 25, 334-337 (2008)

Ar	Energy Levels, Wavelengths	Exp

113. C.-y. Li, T.-t. Wang, J.-f. Zhen, Q. Zhang, Y. Chen
Resonance-Enhanced Photon Excitation Spectroscopy of the Even-Parity Autoionizing Rydberg States of Xe
Chin. J. Chem. Phys. 21, 401-406 (2008)

Xe	Energy Levels, Wavelengths	Exp

114. S.-Z. Huang, K. Ma, J.-M. Yu, F. Liu
Wavefunction and Energy of the $1s^22sns$ Configuration in a Beryllium Atom
Chin. Phys. B 17, 4175-4179 (2008)

Be	Energy Levels, Wavelengths	Th

115. L.-Y. Xie, C.-Z. Dong, J. Jiang, J.-J. Wan, J. Yan
Two-Electron and One-Photon Transitions in Highly Charged Nickel-like Ions
Chin. Phys. B 17, 3294-3299 (2008)

Ni Z= 47-92	Energy Levels, Wavelengths	Th

116. Z.-W. Wang, Y. Liu, M.-H. Hu, X.-R. Li, Y.-N. Wang
Transition Energy and Dipole Oscillator Strength for $1s^22p$–$1s^2nd$ of Cr^{21+} Ion
Chin. Phys. B 17, 2909-2913 (2008)

Cr^{21+}	Energy Levels, Wavelengths	Th

117. W. D. Chen, J. Xiao, Y. Shen, Y. Q. Fu, F. C. Meng, C. Y. Chen, B. H. Zhang, Y. J. Tang, R. Hutton, Y. Zou
Precise Studies on Resonant Energies of the First Intershell (KLL) Dielectronic Recombination Processes for He- up to O-like Xenon
Phys. Plasmas 15, 083301 (2008)

$Xe^{45+-51+}$	Energy Levels, Wavelengths	E/T

118. L. Liang, C. Zhou, L. Zhang
Energy Levels and Radiative Lifetimes of 3pns $^3P^\circ$ and 3pnd $^3P^\circ$ Series of Si I
Chin. Opt. Lett. 6-11, 804-806 (2008)

Si	Energy Levels, Wavelengths	E/T

119. Z. Altun, A. Yumak, I. Yavuz, N. R. Badnell, S. D. Loch, M. S. Pindzola
Dielectronic Recombination Data for Dynamic Finite-Density Plasmas – XIII. The Magnesium Isoelectronic Sequence
Astron. Astrophys. 474, 1051-1059 (2007)

Al Z= 13-30	Energy Levels, Wavelengths	Th
Kr^{23+}	Energy Levels, Wavelengths	Th
Mo^{29+}	Energy Levels, Wavelengths	Th
Xe^{41+}	Energy Levels, Wavelengths	Th

120. M. A. Bautista, N. R. Badnell
Dielectronic Recombination Data for Dynamic Finite-Density Plasmas – XII. The Helium Isoelectronic Sequence
Astron. Astrophys. 466, 755-762 (2007)

Li Z= 3-30	Energy Levels, Wavelengths	Th
Kr^{33+}	Energy Levels, Wavelengths	Th
Mo^{39+}	Energy Levels, Wavelengths	Th
Xe^{51+}	Energy Levels, Wavelengths	Th

121. M. T. Murphy, P. Tzanavaris, J. K. Webb, C. Lovis
Selection of ThAr Lines for Wavelength Calibration of Echelle Spectra and Implications for Variations in the Fine-Structure Constant
Mon. Not. R. Astron. Soc. 378, 221-230 (2007)

Ar^{0+--+}	Energy Levels, Wavelengths	Exp
Th^{0+--2+}	Energy Levels, Wavelengths	Exp

122. L. Liang, Y. C. Wang, Z. Chao
The Theoretical Study of Singly and Doubly Resonances of Photoionization of Neon
Phys. Lett. A 360, 599-602 (2007)

Ne	Energy Levels, Wavelengths	Th

123. M. Anwar-ul-Haq, M. Riaz, R. Ali, M. A. Baig
Resonantly Enhanced Three-Photon Excitation Spectra of Lithium
Opt. Commun. 272, 116-123 (2007)

Li	Energy Levels, Wavelengths	Exp

124. A. K. S. Jha, S. Tyagi, M. Mohan
Photoionization Cross Section for Ni XIX
Astrophys. J. 173, 177-183 (2007)

Ni$^{18+--19+}$	Energy Levels, Wavelengths	Th

125. M. Kato, Y. Morishita, M. Oura, H. Yamaoka, Y. Tamenori, K. Okada, T. Matsudo, T. Gejo, I. H. Suzuki, N. Saito
Absolute Photoionization Cross Sections with Ultra-High Energy Resolution for Ar, Kr, Xe and N_2 in Inner-Shell Ionization Regions
J. Electron Spectrosc. Relat. Phenom. 160, 39-48 (2007)

Ar	Energy Levels, Wavelengths	Exp
Kr	Energy Levels, Wavelengths	Exp
Xe	Energy Levels, Wavelengths	Exp

126. P. Lablanquie, L. Andric, J. Palaudoux, U. Becker, M. Braune, J. Viefhaus, J. H. D. Eland, F. Penent
Multielectron Spectroscopy: Auger Decays of the Argon 2p Hole
J. Electron Spectrosc. Relat. Phenom. 156-158, 51-57 (2007)

$\mathbf{Ar^{2+}}$	Energy Levels, Wavelengths	Exp

127. M. Stanke, D. Kędziera, S. Bubin, L. Adamowicz
Relativistic Corrections to the Non-Born-Oppenheimer Energies of the Lowest Singlet Rydberg States of ^{3}He and ^{4}He
J. Chem. Phys. 126, 194312 (2007)

$\mathbf{^3He}$	Energy Levels, Wavelengths	Th
$\mathbf{^4He}$	Energy Levels, Wavelengths	Th
He	Energy Levels, Wavelengths	Th

128. F. Innocenti, L. Zuin, M. L. Costa, A. A. Dias, A. Morris, S. Stranges, J. M. Dyke
Measurement of the Partial Photoionization Cross Sections and Asymmetry Parameters of S Atoms in the Photon Energy Range 10.0–30.0 eV Using Constant-Ionic-State Spectroscopy
J. Chem. Phys. 126, 154310 (2007)

S	Energy Levels, Wavelengths	Exp

129. M. Barysz, J. Leszczyński
Relativistic Two-Component Infinite Order Method for Atomic Core Ionization Potentials
J. Chem. Phys. 126, 154106 (2007)

Ne	Energy Levels, Wavelengths	Th
$\mathbf{Ne^+}$	Energy Levels, Wavelengths	Th
Ar	Energy Levels, Wavelengths	Th
$\mathbf{Ar^+}$	Energy Levels, Wavelengths	Th
Kr	Energy Levels, Wavelengths	Th
$\mathbf{Kr^+}$	Energy Levels, Wavelengths	Th
Xe	Energy Levels, Wavelengths	Th
$\mathbf{Xe^+}$	Energy Levels, Wavelengths	Th

130. S. Bhattacharyya, A. N. Sil, T. K. Mukherjee, P. K. Mukherjee
One Photon Two Electron Excitations Between Doubly Excited States of Helium
J. Chem. Phys. 126, 011104 (2007)

He	Energy Levels, Wavelengths	Th

131. L. Argenti, R. Moccia
He Photoionization: β_N and σ_N Below N = 5 and 6 Thresholds. – Dipole Asymmetry Parameters Below N = 6 Threshold are Computed for the First Time by Means of a B-Spline Based K-Matrix Method
Theor. Chem. Accounts 118, 485-493 (2007)

He	Energy Levels, Wavelengths	Th

132. G. Çelik, M. Yildiz, H. Ş. Kiliç
Determination of Excited-State Ionization Potentials for Lithium-like Sequence Using Weakest Bound Electron Potential Model Theory
Acta Phys. Pol. A 112, 485-494 (2007)

Li Z= 3-18	Energy Levels, Wavelengths	E/T

133. G. G. Bogachev, E. Yu. Remeta
Study of Postcollision Interaction upon Electron-Impact Excitation of the Magnesium Atom
Opt. Spectrosc. 103, 709-716 (2007)

Mg	Energy Levels, Wavelengths	Exp

134. A. K. Bhatia, E. Landi
Atomic Data and Spectral Line Intensities for Mg IX
At. Data Nucl. Data Tables 93, 742-778 (2007)

$\mathbf{Mg}^{8+}$	Energy Levels, Wavelengths	Th

135. N. C. Deb, A. Hibbert
Breit-Pauli Energy Levels Belonging to $2p^4$, $2s2p^5$, $2p^6$, $2p^3 3\ell$ Configurations and All E1 Transitions Among These Levels in Mg V
At. Data Nucl. Data Tables 93, 585-613 (2007)

$\mathbf{Mg}^{4+}$	Energy Levels, Wavelengths	Th

136. M. Tomaselli, T. Kühl, D. Ursescu, S. Fritzsche
Correlations in Many Electron Systems: Theory and Applications
Can. J. Phys. 85, 573-584 (2007)

$\mathbf{O}^{3+--6+}$	Energy Levels, Wavelengths	Th
$\mathbf{O}^{3+--7+}$	Energy Levels, Wavelengths	Th
$^{235}\mathbf{U}^{89+}$	Energy Levels, Wavelengths	Th
$\mathbf{U}^{89+}$	Energy Levels, Wavelengths	Th

137. M. S. Safronova, C. Froese Fischer, Yu. Ralchenko
Relativistic All-Order and Multiconfiguration Hartree-Fock Calculations of the 4d-4f Energy Separation in Li I
Phys. Rev. A 76, 054502 (2007)

Li	Energy Levels, Wavelengths	Th

138. P. Balling, M. K. Raarup, U. V. Elstrøm, R. G. Martinussen, V. V. Petrunin, T. Andersen
Doppler Tuning VUV Spectroscopy of D^- over an Extended Photon-Energy Range around the n=2 Threshold
Phys. Rev. A 76, 044701 (2007)

$\mathbf{H}^-$	Energy Levels, Wavelengths	Exp
$\mathbf{D}^-$	Energy Levels, Wavelengths	Exp

139. C. Biedermann, R. Radtke
Comment on "Direct Observation of the $^2D_{3/2}$–$^2D_{5/2}$ Ground-State Splitting in Xe^{9+}"
Phys. Rev. A 75, 066501 (2007)

$\mathbf{Xe}^{9+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Xe}^{31+}$	Energy Levels, Wavelengths	Exp

140. L. Natarajan, A. Natarajan
Effects of Configuration Interaction on the Radiative Rates of Li- and Be-like Ions
Phys. Rev. A 75, 062502 (2007)

Li Z= 14-54	Energy Levels, Wavelengths	Th
Be Z= 10-54	Energy Levels, Wavelengths	Th

141. D. Das, V. Natarajan
Absolute Frequency Measurement of the Lithium D Lines: Precise Determination of Isotope Shifts and Fine-Structure Intervals
Phys. Rev. A 75, 052508 (2007)

^{6}**Li**	Energy Levels, Wavelengths	Exp
^{7}**Li**	Energy Levels, Wavelengths	Exp
Li	Energy Levels, Wavelengths	Exp

142. B. A. Bushaw, W. Nörtershäuser, G. W. F. Drake, H.-J. Kluge
Ionization Energy of ^{6,7}Li Determined by Triple-Resonance Laser Spectroscopy
Phys. Rev. A 75, 052503 (2007)

^{6}**Li**	Energy Levels, Wavelengths	Exp
^{7}**Li**	Energy Levels, Wavelengths	Exp
Li	Energy Levels, Wavelengths	Exp

143. R. Pal, M. S. Safronova, W. R. Johnson, A. Derevianko, S. G. Porsev
Relativistic Coupled-Cluster Single-Double Method Applied to Alkali-Metal Atoms
Phys. Rev. A 75, 042515 (2007)

^{7}**Li**	Energy Levels, Wavelengths	Th
Li	Energy Levels, Wavelengths	Th
^{23}**Na**	Energy Levels, Wavelengths	Th
Na	Energy Levels, Wavelengths	Th
^{39}**K**	Energy Levels, Wavelengths	Th
K	Energy Levels, Wavelengths	Th
^{85}**Rb**	Energy Levels, Wavelengths	Th
Rb	Energy Levels, Wavelengths	Th
^{133}**Cs**	Energy Levels, Wavelengths	Th
Cs	Energy Levels, Wavelengths	Th

144. S. Hussain, M. Saleem, M. A. Baig
Measurement of Oscillator Strength Distribution in the Discrete and Continuous Spectrum of Lithium
Phys. Rev. A 75, 022710 (2007)

Li	Energy Levels, Wavelengths	Exp

145. F. Yoshida, F. Koike, S. Obara, Y. Azuma, T. Nagata, S. Hasegawa
1s(2s2p ^{1}P)^{2}Pnℓ, 1s(2s3s ^{3,1}S)^{2}Snp, and 1s(2s3p ^{1}P)^{2}Pns K-Shell Photoexcited Rydberg Series of Beryllium Atoms
Phys. Rev. A 75, 012714 (2007)

Be	Energy Levels, Wavelengths	E/T

146. C. M. Brown, H. Hara, S. Kamio, U. Feldman, J. F. Seely, G. A. Doschek, J. T. Mariska, C. M. Korendyke, J. Lang, K. P. Dere, L. Culhane, R. J. Thomas, J. M. Davila
Wavelength Determination for Solar Features Observed by the EUV Imaging Spectrometer on Hinode
Publ. Astron. Soc. Jpn. 59, S865-S869 (2007)

Si^{9+}	Energy Levels, Wavelengths	Exp
Si^{12+}	Energy Levels, Wavelengths	Exp
Fe$^{8+--15+}$	Energy Levels, Wavelengths	Exp

147. E. Träbert, P. Beiersdorfer, E. H. Pinnington, S. B. Utter, M. J. Vilkas, Y. Ishikawa
Experiment and Theory in Interplay on High-Z Few-Electron Ion Spectra from Foil-Excited Ion Beams and Electron Beam Ion Traps
J. Phys.: Conf. Ser. 58, 93-96 (2007)

Au$^{56+–58+}$	Energy Levels, Wavelengths	Exp

148. Y. Z. Ouyang, Y.-G. Yi, Z.-H. Zhu, Z.-J. Zheng
Magnetic Quadrupole M2 2s^2 $^1S_0$–2s2p $^3P_2$ (Z = 10–103) Transitions for Be-like Ions
Acta Phys. Sin. 56-7, 3880-3886 (2007)

Be Z= 10-26	Energy Levels, Wavelengths	Th
Be Z= 79-80	Energy Levels, Wavelengths	Th
Ni^{24+}	Energy Levels, Wavelengths	Th
Zn^{26+}	Energy Levels, Wavelengths	Th
Kr^{32+}	Energy Levels, Wavelengths	Th
Zr^{36+}	Energy Levels, Wavelengths	Th
Rh^{41+}	Energy Levels, Wavelengths	Th
Sn^{46+}	Energy Levels, Wavelengths	Th
Xe^{50+}	Energy Levels, Wavelengths	Th
Nd^{56+}	Energy Levels, Wavelengths	Th
Eu^{59+}	Energy Levels, Wavelengths	Th
Yb^{66+}	Energy Levels, Wavelengths	Th
W^{70+}	Energy Levels, Wavelengths	Th
Bi^{79+}	Energy Levels, Wavelengths	Th
Th^{86+}	Energy Levels, Wavelengths	Th
U^{88+}	Energy Levels, Wavelengths	Th
Fm^{96+}	Energy Levels, Wavelengths	Th
Lr^{99+}	Energy Levels, Wavelengths	Th

149. N. Verma, A. K. S. Jha, M. Mohan
Electron Collisional Excitation of Argon-like Ni XI Using the Breit-Pauli R-Matrix Method
Eur. Phys. J. D 42, 235-241 (2007)

Ni^{10+}	Energy Levels, Wavelengths	Th

150. D.-S. Kim, Y. S. Kim
Characteristics of Photoionization in the XUV Domain for the Excited 1s^{2}2s2p $^{1,3}P^\circ$ States of the Be-like C^{2+} Ion
J. Phys. B 40, 3807-3822 (2007)

C^{2+}	Energy Levels, Wavelengths	Th

151. G. Turri, B. Lohmann, B. Langer, G. Snell, U. Becker, N. Berrah
Spin Polarization of the Ar* 2p$^{-1}_{1/2}$4s and 2p$^{-1}_{1/2}$3d Resonant Auger Decay
J. Phys. B 40, 3453-3466 (2007)

Ar	Energy Levels, Wavelengths	E/T

152. M. Rafiq, M. A. Kalyar, M. A. Baig
Multi-Photon Excitation Spectra of the 3snℓ (ℓ = 0, 1, 2 and 3) Rydberg States of Magnesium
J. Phys. B 40, 3181-3196 (2007)

Mg	Energy Levels, Wavelengths	Exp

153. R. Wehlitz, D. Lukić, P. N. Juranić
Observation of a New $3s^2 \to$ 3pnd Double-Excitation Rydberg Series in Ground-State Magnesium
J. Phys. B 40, 2385-2397 (2007)

Mg	Energy Levels, Wavelengths	Exp

154. M. Rafiq, S. Hussain, M. Saleem, M. A. Kalyar, M. A. Baig
Measurement of Photoionization Cross Section from the 3s3p $^1P_1$ Excited State of Magnesium
J. Phys. B 40, 2291-2305 (2007)

Mg	Energy Levels, Wavelengths	Exp

155. V. L. Sukhorukov, I. D. Petrov, Ph. V. Demekhin, H. Schmoranzer, S. Mickat, S. Kammer, K.-H. Schartner, S. Klumpp, L. Werner, A. Ehresmann
Interaction Between Doubly-Excited $4p^4n\ell n'\ell'$ Resonances in Kr I
J. Phys. B 40, 1295-1307 (2007)

Kr	Energy Levels, Wavelengths	Exp

156. U. I. Safronova, A. S. Safronova, P. Beiersdorfer
Relativistic Many-Body Calculations of Electric-Dipole Lifetimes, Rates and Oscillator Strengths of $\Delta n=0$ Transitions Between $3\ell^{-1}4\ell'$ States in Ni-like Ions
J. Phys. B 40, 955-974 (2007)

Ni Z= 36-79	Energy Levels, Wavelengths	Th

157. J. E. Hansen, H. Kjeldsen, F. Folkmann, M. Martins, J. B. West
Absolute Photoionization Cross Sections of the Ions Ca^+–Ni^+
J. Phys. B 40, 293-327 (2007)

Ca-Mn^+	Energy Levels, Wavelengths	Exp

158. C. P. Ballance, D. C. Griffin, B. M. McLaughlin
Electron-Impact Excitation of Fe^{4+}: An Intermediate-Coupling R-Matrix Calculation
J. Phys. B 40, F327-F335 (2007)

Fe^{4+}	Energy Levels, Wavelengths	Th

159. C. Zhou, L. Liang, L. Zhang
Calculations of Rydberg Energy Levels for Ni XVIII Using the Weakest Bound Electron Potential Model Theory
Chin. Opt. Lett. 5, 438-440 (2007)

Ni^{17+}	Energy Levels, Wavelengths	E/T

160. S. N. Nahar
Atomic Data from the IRON Project – LXII. Allowed and Forbidden Transitions in Fe XVIII in Relativistic Breit-Pauli Approximation
Astron. Astrophys. 457, 721-728 (2006)

Fe^{17+}	Energy Levels, Wavelengths	Th

161. E. H. Avrett, R. L. Kurucz, R. Loeser
Identification of the Broad Solar Emission Features Near 117 nm
Astron. Astrophys. 452, 651-655 (2006)

S	Energy Levels, Wavelengths	Exp

162. K. M. Aggarwal, F. P. Keenan
Electron Impact Excitation of Fe XVI: Radiative and Excitation Rates
Astron. Astrophys. 450, 1249-1257 (2006)

Fe^{15+}	Energy Levels, Wavelengths	Th

163. Z. Altun, A. Yumak, N. R. Badnell, S. D. Loch, M. S. Pindzola
Dielectronic Recombination Data for Dynamic Finite-Density Plasmas – XI. The Sodium Isoelectronic Sequence
Astron. Astrophys. 447, 1165-1174 (2006)

Mg Z= 12-30	Energy Levels, Wavelengths	Th
Kr^{24+}	Energy Levels, Wavelengths	Th
Mo^{30+}	Energy Levels, Wavelengths	Th
Xe^{42+}	Energy Levels, Wavelengths	Th

164. N. R. Badnell
Dielectronic Recombination Data for Dynamic Finite-Density Plasmas – X. The Hydrogen Isoelectronic Sequence
Astron. Astrophys. 447, 389-395 (2006)

He Z= 2-30	Energy Levels, Wavelengths	Th
Kr^{34+}	Energy Levels, Wavelengths	Th
Mo^{40+}	Energy Levels, Wavelengths	Th
Xe^{52+}	Energy Levels, Wavelengths	Th

165. O. Zatsarinny, T. W. Gorczyca, J. Fu, K. T. Korista, N. R. Badnell, D. W. Savin
Dielectronic Recombination Data for Dynamic Finite-Density Plasmas – IX. The Fluorine Isoelectronic Sequence
Astron. Astrophys. 447, 379-387 (2006)

Ne Z= 10-30	Energy Levels, Wavelengths	Th
Kr^{26+}	Energy Levels, Wavelengths	Th
Mo^{32+}	Energy Levels, Wavelengths	Th
Xe^{44+}	Energy Levels, Wavelengths	Th

166. A. Kumar, D. Misra, K. V. Thulasiram, L. C. Tribedi, A. K. Pradhan
High Resolution Studies of Al Satellite Lines and Si-Projectile X-rays in Electron-Atom and Ion-Atom Collisions
Nucl. Instrum. Methods Phys. Res. B 248, 247-252 (2006)

$Si^{11+-13+}$	Energy Levels, Wavelengths	E/T

167. M. van Faassen, K. Burke
The Quantum Defect: The True Measure of Time-Dependent Density-Functional Results for Atoms
J. Chem. Phys. 124, 094102 (2006)

He	Energy Levels, Wavelengths	Th
Be	Energy Levels, Wavelengths	Th
Ne	Energy Levels, Wavelengths	Th

168. F. J. Gálvez, E. Buendía, A. Sarsa
One- and Two-Body Densities of Carbon Isoelectronic Series in Their Low-Lying Multiplet States from Explicitly Correlated Wave Functions
J. Chem. Phys. 124, 044319 (2006)

C Z= 6-10	Energy Levels, Wavelengths	Th

169. E. É. Kontros, I. V. Chernyshova, O. B. Shpenik
Near-Threshold Electron-Impact Ionization of Magnesium
Opt. Spectrosc. 101-4, 537-545 (2006)

Mg	Energy Levels, Wavelengths	Exp

170. V. A. Yerokhin, P. Indelicato, V. M. Shabaev
Nonperturbative Calculation of the Two-Loop Lamb Shift in Li-like Ions
Phys. Rev. Lett. 97, 253004 (2006)

Li Z= 60-100	Energy Levels, Wavelengths	Th
$\mathbf{Bi}^{80+}$	Energy Levels, Wavelengths	Th
$\mathbf{U}^{89+}$	Energy Levels, Wavelengths	Th

171. Y. Hikosaka, T. Aoto, P. Lablanquie, F. Penent, E. Shigemasa, K. Ito
Experimental Investigation of Core-Valence Double Photoionization
Phys. Rev. Lett. 97, 053003 (2006)

$\mathbf{Ne}^{2+}$	Energy Levels, Wavelengths	Exp

172. A. K. Bhatia, E. Landi, W. Eissner
Atomic Data and Spectral Line Intensities for Mg V
At. Data Nucl. Data Tables 92, 105-175 (2006)

$\mathbf{Mg}^{4+}$	Energy Levels, Wavelengths	Th

173. S. S. Tayal
Resonant Photoionization of Singly Charged Sulfur
Phys. Rev. A 74, 022704 (2006)

$\mathbf{S}^{+}$	Energy Levels, Wavelengths	E/T

174. M. Lu, M. F. Gharaibeh, G. Alna'washi, R. A. Phaneuf, A. L. D. Kilcoyne, E. Levenson, A. S. Schlachter, A. Müller, S. Schippers, J. Jacobi, S. W. J. Scully, C. Cisneros
Photoionization and Electron-Impact Ionization of $\mathbf{Kr}^{5+}$
Phys. Rev. A 74, 012703 (2006)

$\mathbf{Kr}^{5+}$	Energy Levels, Wavelengths	E/T

175. G. A. Noble, B. E. Schultz, H. Ming, W. A. van Wijngaarden
Isotope Shifts and Fine Structures of ^{6,7}Li D Lines and Determination of the Relative Nuclear Charge Radius
Phys. Rev. A 74, 012502 (2006)

^{6}**Li**	Energy Levels, Wavelengths	Exp
^{7}**Li**	Energy Levels, Wavelengths	Exp
Li	Energy Levels, Wavelengths	Exp

176. M. Mohan, A. K. S. Jha, N. Singh
Semi-Relativistic Calculations for the Photoionization of Neutral Argon from Its Four Lowest J-States
Phys. Scr. 73, 601-606 (2006)

Ar	Energy Levels, Wavelengths	Th

177. Z.-S. Yuan, Y. Sakai, N. Umeda, Y. Fujita, T. Takayanagi, C. Yamada, N. Nakamura, S. Ohtani, L.-F. Zhu, K.-Z. Xu
Autoionization States in Xenon Investigated by Electron Impact
J. Phys. B 39, 5097-5103 (2006)

Xe	Energy Levels, Wavelengths	Exp

178. A. Yu. Elizarov, I. I. Tupitsyn
Angular Distribution and Spin Polarization of Auger Transitions of the Ne, Ar, Kr and Xe Excited States
J. Phys. B 39, 4329-4338 (2006)

Ne	Energy Levels, Wavelengths	Th
Ar	Energy Levels, Wavelengths	Th
Kr	Energy Levels, Wavelengths	Th
Xe	Energy Levels, Wavelengths	Th

179. F. Chen, M. Zhang, B. C. Gou
Energies, Auger Widths and Branching Ratios of the Doubly Core-Excited $2s2p^3$ Resonances for Be-like Oxygen
J. Phys. B 39, 4249-4260 (2006)

O^{4+}	Energy Levels, Wavelengths	Th

180. S. W. J. Scully, I. Álvarez, C. Cisneros, E. D. Emmons, M. F. Gharaibeh, D. Leitner, M. S. Lubell, A. Müller, R. A. Phaneuf, R. Püttner, A. S. Schlachter, S. Schippers, W. Shi, C. P. Ballance, B. M. McLaughlin
Doubly Excited Resonances in the Photoionization Spectrum of Li^+: Experiment and Theory
J. Phys. B 39, 3957-3968 (2006)

Li^+	Energy Levels, Wavelengths	Exp

181. S. Hussain, M. Saleem, N. M. Shaikh, M. A. Baig
A Comparative Study of RF and dc Discharge Based Laser Optogalvanic Spectroscopy of Helium Rydberg States
J. Phys. B 39, 3788-3798 (2006)

He	Energy Levels, Wavelengths	Exp

182. Y. Hikosaka, T. Aoto, P. Lablanquie, F. Penent, E. Shigemasa, K. Ito
Auger Decay of Ne 1s Photoionization Satellites Studied by a Multi-Electron Coincidence Method
J. Phys. B 39, 3457-3464 (2006)

Ne^{2+}	Energy Levels, Wavelengths	Exp

183. T. T. Gien
Doubly Excited $^1P^\circ$ States of He at Energies Below the N = 2 Threshold of He^+
J. Phys. B 39, 2969-2978 (2006)

He	Energy Levels, Wavelengths	Th

184. L. Argenti, R. Moccia
K-Matrix Method with B-Splines: $\sigma_n\ell$, β_n and Resonances in He Photoionization Below N = 4 Threshold
J. Phys. B 39, 2773-2790 (2006)

He	Energy Levels, Wavelengths	Th

185. S. Kammer, K.-H. Schartner, S. Mickat, R. Schill, A. Ehresmann, L. Werner, S. Klumpp, H. Schmoranzer, I. D. Petrov, Ph. V. Demekhin, V. L. Sukhorukov
Cross Sections for Photoabsorption and $3p^4 4s,3d$ Satellite Production at Energies of the Doubly Excited Ar $3p^4(^3P)4s^2P_{3/2,1/2}np$ Resonances
J. Phys. B 39, 2757-2771 (2006)

Ar	Energy Levels, Wavelengths	E/T

186. A. E. Kingston, A. Hibbert
The Spectrum of Optically Allowed Transitions from the $3p^6 3d$ Ground State of Ti IV
J. Phys. B 39, 2217-2230 (2006)

Ti^{3+}	Energy Levels, Wavelengths	Th

187. M. Kato, Y. Morishita, F. Koike, S. Fritzsche, H. Yamaoka, Y. Tamenori, K. Okada, T. Matsudo, T. Gejo, I. H. Suzuki, N. Saito
High-Resolution Absolute Photoabsorption Cross Sections for Ne in the 1s2s and 1s2p Resonant Double Excitation
J. Phys. B 39, 2059-2069 (2006)

Ne	Energy Levels, Wavelengths	E/T
Ne^{0+--+}	Energy Levels, Wavelengths	E/T

188. C. Blondel, W. Chaibi, C. Delsart, C. Drag
The Fine Structure of S and S^- Measured with the Photodetachment Microscope
J. Phys. B 39, 1409-1416 (2006)

S^-	Energy Levels, Wavelengths	Exp
^{32}S	Energy Levels, Wavelengths	Exp
S	Energy Levels, Wavelengths	Exp

189. M. C. Martins, J. P. Santos, A. M. Costa, F. Parente
Transition Wavelengths and Probabilities for Spectral Lines of Zr III
Eur. Phys. J. D 39, 167-172 (2006)

Zr^{2+}	Energy Levels, Wavelengths	Th

190. Z. B. Wang, B. C. Gou, F. Chen
Energy, Fine Structure, and Hyperfine Structure of the Core-Excited States 1s2s2pnp ^5P (N=2-5) and $1s2p^2mp$ ^5S (M=2-5) for Li^- Ion
Eur. Phys. J. D 37, 345-349 (2006)

Li^-	Energy Levels, Wavelengths	Th

191. D. Kato, N. Nakamura, S. Ohtani
X-ray Spectral Analysis on Electron Interaction with Highly-Charged Ions in Tokyo-EBIT
J. Plasma Fusion Res. Series 7, 190-194 (2006)

Ne Z= 50-54	Energy Levels, Wavelengths	Exp
Ne Z= 55-56	Energy Levels, Wavelengths	Exp
Si Z= 53-54	Energy Levels, Wavelengths	Exp
Mg Z= 50-54	Energy Levels, Wavelengths	Exp
Na Z= 50-54	Energy Levels, Wavelengths	Exp
Na Z= 55-56	Energy Levels, Wavelengths	Exp
Xe^{41+}	Energy Levels, Wavelengths	Exp

192. J. K. Lepson, P. Beiersdorfer, E. Behar, S. M. Kahn
Emission-Line Spectra of S VII-S XIV in the 20-75 Å Wavelength Region
Astrophys. J. 625, 1045-1061 (2005)

$\mathbf{S^{6+}\text{--}^{13+}}$	Energy Levels, Wavelengths	Exp

193. M. C. Chidichimo, G. Del Zanna, H. E. Mason, N. R. Badnell, J. A. Tully, K. A. Berrington
Atomic Data from the IRON Project – LVI. Electron Excitation of Be-like Fe XXIII for the n=2,3,4 Configurations
Astron. Astrophys. 430, 331-341 (2005)

$\mathbf{Fe^{22+}}$	Energy Levels, Wavelengths	Th

194. A. N. Sil, T. K. Mukherjee, P. K. Mukherjee
Doubly Excited State $(2p^2)^3P^e$ in Li II
Chem. Phys. Lett. 406, 279-281 (2005)

$\mathbf{Li^{+}}$	Energy Levels, Wavelengths	Th

195. Y. Nakai, T. Ikeda, Y. Kanai, T. Kambara, N. Fukunishi, K. Komaki, C. Kondo, T. Azuma, Y. Yamazaki
Resonant Coherent Excitation of 2s Electron of Li-like Fe Ions to the n = 3 States
Nucl. Instrum. Methods Phys. Res. B 230, 90-95 (2005)

$\mathbf{Fe^{23+}}$	Energy Levels, Wavelengths	Exp

196. Y.-Y. Lee, T.-Y. Dung, J.-Y. Yu, Y.-F. Song, K.-T. Hsu, K.-K. Lin
Two-Color Photoionization of Noble Gases Using Laser and VUV Synchrotron Radiation
J. Electron Spectrosc. Relat. Phenom. 144-147, 29-33 (2005)

Ar	Energy Levels, Wavelengths	Exp
Xe	Energy Levels, Wavelengths	Exp

197. E. Eliav, M. J. Vilkas, Y. Yoshizawa, U. Kaldor
Extrapolated Intermediate Hamiltonian Coupled-Cluster Approach: Theory and Pilot Application to Electron Affinities of Alkali Atoms
J. Chem. Phys. 122, 224113 (2005)

$\mathbf{Li^{-}}$	Energy Levels, Wavelengths	Th
$\mathbf{Na^{-}}$	Energy Levels, Wavelengths	Th
$\mathbf{K^{-}}$	Energy Levels, Wavelengths	Th
$\mathbf{Rb^{-}}$	Energy Levels, Wavelengths	Th
$\mathbf{Cs^{-}}$	Energy Levels, Wavelengths	Th
$\mathbf{Fr^{-}}$	Energy Levels, Wavelengths	Th

198. I. Lindgren
Calculation of Electron Binding Energies and Affinities
Phys. Scr. T120, 15-18 (2005)

$\mathbf{Li^{-}}$	Energy Levels, Wavelengths	Th
Li	Energy Levels, Wavelengths	Th
$\mathbf{Na^{-}}$	Energy Levels, Wavelengths	Th
Na	Energy Levels, Wavelengths	Th

199. F. Penent, J. Palaudoux, P. Lablanquie, L. Andric, R. Feifel, J. H. D. Eland
Multielectron Spectroscopy: The Xenon 4d Hole Double Auger Decay
Phys. Rev. Lett. 95, 083002 (2005)

Xe^{2+}–$^{3+}$ Energy Levels, Wavelengths Exp

200. S. Aloïse, P. O'Keeffe, D. Cubaynes, M. Meyer, A. N. Grum-Grzhimailo
Photoionization of Synchrotron-Radiation-Excited Atoms: Separating Partial Cross Sections by Full Polarization Control
Phys. Rev. Lett. 94, 223002 (2005)

Xe	Energy Levels, Wavelengths	Exp

201. Jiaolong Zeng, J.-Y. Zhong, G. Zhao, Jianmin Yuan
Electron Impact Collision Strengths and Oscillator Strengths for Ni-like Nd, Sm, Eu, Gd, Ta, and W Ions
At. Data Nucl. Data Tables 90, 259-317 (2005)

Ni Z= 62-64	Energy Levels, Wavelengths	Th
Ni Z= 73-74	Energy Levels, Wavelengths	Th
Nd^{32+}	Energy Levels, Wavelengths	Th

202. M. Tomaselli
Lithium Transition Energies and Isotopic Shift: Three Correlated Electron States
Can. J. Phys. 83, 467-474 (2005)

^{7}Li	Energy Levels, Wavelengths	Th
Li	Energy Levels, Wavelengths	Th

203. P. J. Mohr, B. N. Taylor
CODATA Recommended Values of the Fundamental Physical Constants: 2002
Rev. Mod. Phys. 77, 1-107 (2005)

^{1}H	Energy Levels, Wavelengths	Exp
H	Energy Levels, Wavelengths	Exp
D	Energy Levels, Wavelengths	Exp

204. D.-S. Kim, H.-C. Kang
Photoelectron Angular Distributions for Photoionization of the Be-like B^{+} Ion
J. Phys. Soc. Japan 74, 317-320 (2005)

B^{+}	Energy Levels, Wavelengths	Th

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Magnetic-Dipole Transition Probabilities in B-like and Be-like Ions
Phys. Rev. A 72, 062503 (2005)

Be Z= 16-22	Energy Levels, Wavelengths	Th
B Z= 16-22	Energy Levels, Wavelengths	Th

206. R. C. Bilodeau, N. D. Gibson, J. D. Bozek, C. W. Walter, G. D. Ackerman, P. Andersson, J. G. Heredia, M. Perri, N. Berrah
High-Charge-State Formation Following Inner-Shell Photodetachment from S^{-}
Phys. Rev. A 72, 050701 (2005)

S^{-}	Energy Levels, Wavelengths	Exp
S	Energy Levels, Wavelengths	Exp

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Electron-Impact Excitation of Carbon
Phys. Rev. A 71, 042702 (2005)

C Energy Levels, Wavelengths Th

208. C. Chen, X.-Y. Han, J.-M. Li
Calculations of High Rydberg States for the Lithium Atom
Phys. Rev. A 71, 042503 (2005)

Li	Energy Levels, Wavelengths	Th

209. N. A. B. Faye, A. S. Ndao, A. Konte, M. Biaye, A. Wague
Photoionization Energies and Oscillator Strengths of Helium and Helium-like Ions with Z = 6–8
Phys. Scr. 71, 602-610 (2005)

He Z= 6-8	Energy Levels, Wavelengths	Th
He	Energy Levels, Wavelengths	Th

210. M. Mohan, A. K. Singh, A. K. S. Jha, N. Singh
Fine-Structure Energy Levels, Oscillator Strengths and Lifetimes of Chlorine-like Chromium
Pramana 65, 75-84 (2005)

$\mathbf{Cr}^{7+}$	Energy Levels, Wavelengths	Th

211. J. Y. Zhong, J. L. Zeng, G. Zhao, M. A. Bari, J. Zhang
Electron Impact Excitation of Ti XVIII
Publ. Astron. Soc. Jpn. 57-5, 835-840 (2005)

$\mathbf{Ti}^{17+}$	Energy Levels, Wavelengths	Th

212. James Avery, John Avery
Autoionizing States of Atoms Calculated Using Generalized Sturmians
Adv. Quantum Chem. 49, 103-119 (2005)

He Z= 6-30	Energy Levels, Wavelengths	Th

213. S. S. Tayal, O. Zatsarinny
B-Spline R-Matrix with Pseudostates Approach for Electron Impact Excitation of Atomic Nitrogen
J. Phys. B 38, 3631-3645 (2005)

$\mathbf{N}^{-}$	Energy Levels, Wavelengths	Th
N	Energy Levels, Wavelengths	Th

214. U. I. Safronova, T. E. Cowan, M. S. Safronova
Relativistic Many-Body Calculations of Electric-Dipole Lifetimes, Transition Rates and Oscillator Strengths for $2\ell^{-1}3\ell'$ States in Ne-like Ions
J. Phys. B 38, 2741-2763 (2005)

Ne Z= 26-38	Energy Levels, Wavelengths	Th

215. W. DeGraffenreid, C. J. Sansonetti
Coincidence in the Two-Photon Spectra of Li and Li_2 at 735 nm
J. Phys. B 38, 457-463 (2005)

$^{6}\mathbf{Li}$	Energy Levels, Wavelengths	Exp
Li	Energy Levels, Wavelengths	Exp

216. M. Meyer, M. Gisselbrecht, A. Marquette, C. Delisle, M. Larzillière, I. D. Petrov, N. V. Demekhina, V. L. Sukhorukov
Two-Colour Studies of the Even-Parity Autoionization Series $5p^5_{1/2}n\ell'$ (ℓ = p, f) in Atomic Xenon
J. Phys. B 38, 285-295 (2005)

Xe	Energy Levels, Wavelengths	Exp

217. S. I. Themelis
Electron Correlations and Classification Schemes for Intershell Doubly Excited States
Few-Body Systems 37, 141-154 (2005)

H^{-}	Energy Levels, Wavelengths	Th
He	Energy Levels, Wavelengths	Th

218. C. Chen, Z. W. Wang
Resonance Calculations of d-f Intervals for the Lithium Rydberg States
Chin. Phys. 14, 505-510 (2005)

Li	Energy Levels, Wavelengths	Th

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$1s^2 2pns(^1P^\circ)$ Autoionizing Levels in Be-like Al and C Ions
Phys. Plasmas 12, 043301 (2005)

C^{2+}	Energy Levels, Wavelengths	Th
Al^{9+}	Energy Levels, Wavelengths	Th

220. J. Reader, C. H. Corliss
Line Spectra of the Elements
CRC Handbook of Chemistry and Physics, 86th edition, Boca Raton, FL ¡br¿CRC Press, (2005)

He	Energy Levels, Wavelengths	Exp
He^{+}	Energy Levels, Wavelengths	Exp
Li^{0+--2+}	Energy Levels, Wavelengths	Exp
Be^{0+--3+}	Energy Levels, Wavelengths	Exp
C-Ne^{0+--4+}	Energy Levels, Wavelengths	Exp
Na^{0+--3+}	Energy Levels, Wavelengths	Exp
Mg-Ni^{0+--4+}	Energy Levels, Wavelengths	Exp
Cu^{0+--2+}	Energy Levels, Wavelengths	Exp
Zn^{0+--3+}	Energy Levels, Wavelengths	Exp
Ga-Kr^{0+--4+}	Energy Levels, Wavelengths	Exp
Rb^{0+--3+}	Energy Levels, Wavelengths	Exp
Sr-Nb^{0+--4+}	Energy Levels, Wavelengths	Exp
Mo^{0+--3+}	Energy Levels, Wavelengths	Exp
Tc	Energy Levels, Wavelengths	Exp
Ru-Ag^{0+--2+}	Energy Levels, Wavelengths	Exp
Cd^{0+--3+}	Energy Levels, Wavelengths	Exp
In-Sb^{0+--4+}	Energy Levels, Wavelengths	Exp
Te	Energy Levels, Wavelengths	Exp
Te^{+}	Energy Levels, Wavelengths	Exp
I^{0+--4+}	Energy Levels, Wavelengths	Exp
Xe-Cs^{0+--2+}	Energy Levels, Wavelengths	Exp
Ba-Pr^{0+--4+}	Energy Levels, Wavelengths	Exp
Nd-Sm^{0+--+}	Energy Levels, Wavelengths	Exp

Eu^{0+--2+}	Energy Levels, Wavelengths	Exp
Gd-Tb^{0+--3+}	Energy Levels, Wavelengths	Exp
Dy-Ho^{0+--+}	Energy Levels, Wavelengths	Exp
Er-Tm^{0+--2+}	Energy Levels, Wavelengths	Exp
Yb^{0+--3+}	Energy Levels, Wavelengths	Exp
Hf-Ta^{0+--4+}	Energy Levels, Wavelengths	Exp
W-Pt^{0+--+}	Energy Levels, Wavelengths	Exp
Au-Hg^{0+--2+}	Energy Levels, Wavelengths	Exp
^{198}**Hg**	Energy Levels, Wavelengths	Exp
^{198}**Hg**$^{+}$	Energy Levels, Wavelengths	Exp
Tl^{0+--3+}	Energy Levels, Wavelengths	Exp
Pb-Bi^{0+--4+}	Energy Levels, Wavelengths	Exp
Po-Fr	Energy Levels, Wavelengths	Exp
Ra	Energy Levels, Wavelengths	Exp
Ra^{+}	Energy Levels, Wavelengths	Exp
Ac^{0+--2+}	Energy Levels, Wavelengths	Exp
Th^{0+--3+}	Energy Levels, Wavelengths	Exp
Pa-U^{0+--+}	Energy Levels, Wavelengths	Exp
Np	Energy Levels, Wavelengths	Exp
Pu	Energy Levels, Wavelengths	Exp
Pu^{+}	Energy Levels, Wavelengths	Exp

221. O. Zatsarinny, T. W. Gorczyca, K. T. Korista, N. R. Badnell, D. W. Savin
Dielectronic Recombination Data for Dynamic Finite-Density Plasmas – VII. The Neon Isoelectronic Sequence
Astron. Astrophys. 426, 699-705 (2004)

Na Z= 11-30	Energy Levels, Wavelengths	Th
Kr^{25+}	Energy Levels, Wavelengths	Th
Mo^{31+}	Energy Levels, Wavelengths	Th
Cd^{37+}	Energy Levels, Wavelengths	Th
Xe^{43+}	Energy Levels, Wavelengths	Th

222. D. M. Mitnik, N. R. Badnell
Dielectronic Recombination Data for Dynamic Finite-Density Plasmas – VIII. The Nitrogen Isoelectronic Sequence
Astron. Astrophys. 425, 1153-1159 (2004)

O Z= 8-30	Energy Levels, Wavelengths	Th
Kr^{28+}	Energy Levels, Wavelengths	Th
Mo^{34+}	Energy Levels, Wavelengths	Th
Xe^{46+}	Energy Levels, Wavelengths	Th

223. S. Schippers, M. Schnell, C. Brandau, S. Kieslich, A. Müller, A. Wolf
Experimental Mg IX Photorecombination Rate Coefficient
Astron. Astrophys. 421-3, 1185-1191 (2004)

Mg^{7+}	Energy Levels, Wavelengths	Exp

224. Z. Altun, A. Yumak, N. R. Badnell, J. Colgan, M. S. Pindzola
Dielectronic Recombination Data for Dynamic Finite-Density Plasmas – VI. The Boron Isoelectronic Sequence
Astron. Astrophys. 420, 775-781 (2004)

C Z= 6-30	Energy Levels, Wavelengths	Th
Kr^{30+}	Energy Levels, Wavelengths	Th
Mo^{36+}	Energy Levels, Wavelengths	Th
Xe^{48+}	Energy Levels, Wavelengths	Th

225. J. Colgan, M. S. Pindzola, N. R. Badnell
Dielectronic Recombination Data for Dynamic Finite-Density Plasmas – V: The Lithium Isoelectronic Sequence
Astron. Astrophys. 417, 1183-1188 (2004)

Be Z= 4-18	Energy Levels, Wavelengths	Th
Be Z= 20-30 step 2	Energy Levels, Wavelengths	Th
$\mathbf{Kr}^{32+}$	Energy Levels, Wavelengths	Th
$\mathbf{Mo}^{38+}$	Energy Levels, Wavelengths	Th
$\mathbf{Xe}^{50+}$	Energy Levels, Wavelengths	Th

226. V. Jonauskas, F. P. Keenan, M. E. Foord, R. F. Heeter, S. J. Rose, P. A. M. van Hoof, G. J. Ferland, K. M. Aggarwal, R. Kisielius, P. H. Norrington
Relativistic Allowed and Forbidden Transition Probabilities for Fluorine-like Fe XVIII
Astron. Astrophys. 416, 383-389 (2004)

$\mathbf{Fe}^{17+}$	Energy Levels, Wavelengths	Th

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A Spectroscopic Atlas of o Pegasi (A1 IV) $\lambda\lambda$ 3826–4882
Astron. Astrophys. 413, 285-291 (2004)

H	Energy Levels, Wavelengths	Exp
He	Energy Levels, Wavelengths	Exp
$\mathbf{C}^{0+--+}$	Energy Levels, Wavelengths	Exp
O	Energy Levels, Wavelengths	Exp
$\mathbf{Mg\text{-}Si}^{0+--+}$	Energy Levels, Wavelengths	Exp
$\mathbf{S}^{0+--+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Ca}^{0+--+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Sc}^{+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Ti\text{-}Ni}^{0+--+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Fe}^{2+}$	Energy Levels, Wavelengths	Exp
Zn	Energy Levels, Wavelengths	Exp
$\mathbf{Sr\text{-}Zr}^{+}$	Energy Levels, Wavelengths	Exp
Cd	Energy Levels, Wavelengths	Exp
$\mathbf{Ba\text{-}Ce}^{+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Nd}^{+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Eu\text{-}Yb}^{+}$	Energy Levels, Wavelengths	Exp

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Atomic Negative Ions: Structure, Dynamics and Collisions
Phys. Rep. 394, 157-313 (2004)

$\mathbf{H\text{-}F}^{-}$	Energy Levels, Wavelengths	E/T
$\mathbf{Na\text{-}Cl}^{-}$	Energy Levels, Wavelengths	E/T
$\mathbf{Ar\text{-}Ca}^{-}$	Energy Levels, Wavelengths	E/T
$\mathbf{Ga\text{-}Br}^{-}$	Energy Levels, Wavelengths	E/T
$\mathbf{Rb}^{-}$	Energy Levels, Wavelengths	E/T
$\mathbf{Sr}^{-}$	Energy Levels, Wavelengths	E/T
$\mathbf{In\text{-}Pr}^{-}$	Energy Levels, Wavelengths	E/T
$\mathbf{Tm\text{-}Lu}^{-}$	Energy Levels, Wavelengths	E/T
$\mathbf{Re\text{-}Au}^{-}$	Energy Levels, Wavelengths	E/T
$\mathbf{Tl}^{-}$	Energy Levels, Wavelengths	E/T
$\mathbf{Bi}^{-}$	Energy Levels, Wavelengths	E/T
$\mathbf{Fr}^{-}$	Energy Levels, Wavelengths	E/T
$\mathbf{Ra}^{-}$	Energy Levels, Wavelengths	E/T

229. S. S. Tayal
Effective Collision Strengths for Fine-Structure Transitions in S I
Astrophys. J., Suppl. Ser. 153, 581-593 (2004)

S	Energy Levels, Wavelengths	Th

230. U. I. Safronova, M. S. Safronova
Relativistic Many-Body Calculations of E1, E2, M1, and M2 Transitions Rates for the $1s2l'2l'' - 1s^2 2l$ Lines in Li-like Ions
Mol. Phys. 102-11-12, 1331-1344 (2004)

Li Z= 6-28	Energy Levels, Wavelengths	Th
U^{89+}	Energy Levels, Wavelengths	Th

231. N. W. Zheng, T. Wang
Calculation of Excited-State Ionization Potential for Boron-like Sequence
Int. J. Quantum Chem. 98, 495-501 (2004)

B Z= 5-19	Energy Levels, Wavelengths	E/T

232. N.-W. Zheng, T. Wang, D.-X. Ma, T. Zhou, J. Fan
Weakest Bound Electron Potential Model Theory
Int. J. Quantum Chem. 98, 281-290 (2004)

O Z= 8-22	Energy Levels, Wavelengths	E/T
C	Energy Levels, Wavelengths	E/T

233. C. Froese-Fischer, G. I. Tachiev
Breit-Pauli Energy Levels, Lifetimes, and Transition Probabilities for the Beryllium-like to Neon-like Sequences
At. Data Nucl. Data Tables 87, 1-184 (2004)

Be Z= 4-12	Energy Levels, Wavelengths	Th
B Z= 5-14	Energy Levels, Wavelengths	Th
C Z= 6-15	Energy Levels, Wavelengths	Th
N Z= 7-17	Energy Levels, Wavelengths	Th
O Z= 8-20	Energy Levels, Wavelengths	Th
F Z= 9-22	Energy Levels, Wavelengths	Th
Ne Z= 10-24	Energy Levels, Wavelengths	Th

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Weighted Oscillator Strengths and Lifetimes for the S VII Spectrum
J. Quant. Spectrosc. Radiat. Transfer 83, 751-763 (2004)

S^{6+}	Energy Levels, Wavelengths	E/T

235. N.-W. Zheng, Z.-Q. Li, D.-X. Ma, T. Zhou, J. Fan
Theoretical Study of Energy Levels of Atomic Ga
Can. J. Phys. 82, 523-529 (2004)

Ga	Energy Levels, Wavelengths	E/T

236. A. Shlyaptseva, D. Fedin, S. Hamasha, C. Harris, V. Kantsyrev, P. Neill, N. Ouart, U. I. Safronova, P. Beiersdorfer, K. Boyce, G. V. Brown, R. Kelley, C. A. Kilbourne, F. S. Porter
Development of M-Shell X-ray Spectroscopy and Spectropolarimetry of z-Pinch Tungsten Plasmas
Rev. Sci. Instrum. 75, 3750-3752 (2004)

W^{46+} Energy Levels, Wavelengths Exp

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High-Resolution Compact Johann Crystal Spectrometer with the Livermore Electron Beam Ion Trap
Rev. Sci. Instrum. 75, 3717-3719 (2004)

S^{12+}–$^{14+}$ Energy Levels, Wavelengths Exp

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Photodetachment of the Outer Shell of C^{-} in the Ground State
Phys. Rev. A 70, 022713 (2004)

C^{-} Energy Levels, Wavelengths Th

239. P. Hakel, R. C. Mancini, J.-C. Gauthier, E. Minguez, J. Dubau, M. Cornille
X-ray Line Polarization of He-like Si Satellite Spectra in Plasmas Driven by High-Intensity Ultrashort Pulsed Lasers
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Si^{12+} Energy Levels, Wavelengths Exp

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Relativistic Energies of the Singly Excited and Doubly Excited Rydberg Series in Helium
Acta Phys. Sin. 53-1, 48-53 (2004)

He Energy Levels, Wavelengths Th

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Autoionizing Rydberg Series in the Photoionization of the Ground State of the Be-like B^{+} Ion
J. Korean Phys. Soc. 44-2, 260-266 (2004)

Be^{+} Energy Levels, Wavelengths Th

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Rydberg Series in the Photoionization of the Excited $1s^2 2s3s$ $^{1,3}S^e$ States of Atomic Beryllium
Jpn. J. Appl. Phys. 43, 1612-1618 (2004)

Be Energy Levels, Wavelengths Th

243. D.-S. Kim, S. T. Manson
Photoionization of the Ground State of the Be-like C^{2+} Ion Leading to C^{3+} 2l and 3l States
J. Phys. B 37, 4707-4718 (2004)

C^{2+} Energy Levels, Wavelengths Th

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Electron-Impact Excitation of Xe^{26+} and Its Resultant Spectral Signature
J. Phys. B 37, 4589-4601 (2004)

Xe^{26+} Energy Levels, Wavelengths Th

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Photoelectron Spectrometry of Atomic Chromium in the Region of the 3p → 3d Giant Resonance
J. Phys. B 37, 3435-3455 (2004)

Cr	Energy Levels, Wavelengths	Exp

246. Jiaolong Zeng, G.-X. Dong, G. Zhao, Jianmin Yuan
The Photoionization of Fe^{7+} and Fe^{8+} in the 2p-3d Resonance Energy Region
J. Phys. B 37, 2529-2542 (2004)

Fe^{7+}–$^{9+}$	Energy Levels, Wavelengths	Th

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Electron-Impact Single and Multiple Ionization of Mg^+ Ions
J. Phys. B 37, 1503-1518 (2004)

Mg	Energy Levels, Wavelengths	Exp

248. H. Kjeldsen, F. Folkmann, B. Kristensen, J. B. West, J. E. Hansen
Absolute Cross Section for Photoionization of Mn^+ in the 3p Region
J. Phys. B 37, 1321-1330 (2004)

Mn^+	Energy Levels, Wavelengths	Exp

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Experimental High Resolution Study of the Photoproduction of Ne^+ 3p Satellites in the Threshold Energy Range
J. Phys. B 37, 511-523 (2004)

Ne	Energy Levels, Wavelengths	Exp

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The 1s→2p Resonance Photoionization from the Low-Lying States of O^+ – Energies, Autoionization Widths, Branching Ratios, and Oscillator Strengths
Eur. Phys. J. D 28, 163-170 (2004)

O^+–$^{2+}$	Energy Levels, Wavelengths	Th

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Relativistic Energy of Highly Triply Excited 3l3l′nl″ $^2P^\circ$ (m) (m = 1–5) States of Lithium
Chin. Phys. Lett. 21, 829-831 (2004)

Li	Energy Levels, Wavelengths	Th

252. J.-U. Ness, N. S. Brickhouse, J. J. Drake, D. P. Huenemoerder
Modeling the Ne IX Triplet Spectral Region of Capella with the Chandra and XMM-Newton Gratings
Astrophys. J. 598, 1277-1289 (2003)

Ne^{8+}	Energy Levels, Wavelengths	Exp
Fe^{14+}–$^{23+}$	Energy Levels, Wavelengths	Exp

253. J. Colgan, M. S. Pindzola, A. D. Whiteford, N. R. Badnell
Dielectronic Recombination Data for Dynamic Finite-Density Plasmas – III. The Beryllium Isoelectronic Sequence
Astron. Astrophys. 412, 597-601 (2003)

B Z= 5-18	Energy Levels, Wavelengths	Th
B Z= 20-30 step 2	Energy Levels, Wavelengths	Th
Kr^{31+}	Energy Levels, Wavelengths	Th
Mo^{37+}	Energy Levels, Wavelengths	Th
Xe^{49+}	Energy Levels, Wavelengths	Th

254. O. Zatsarinny, T. W. Gorczyca, K. T. Korista, N. R. Badnell, D. W. Savin
Dielectronic Recombination Data for Dynamic Finite-Density Plasmas. II. The Oxygen Isoelectronic Sequence
Astron. Astrophys. 412, 587-595 (2003)

F Z= 9-30	Energy Levels, Wavelengths	Th
Mo^{33+}	Energy Levels, Wavelengths	Th
Xe^{45+}	Energy Levels, Wavelengths	Th

255. K. M. Aggarwal, F. P. Keenan, A. Z. Msezane
Effective Collision Strengths for Transitions in Fe XV
Astron. Astrophys. 410, 349-358 (2003)

Fe^{14+}	Energy Levels, Wavelengths	Th

256. E. Charro, S. López-Ferrero, I. Martín
Trends in E2 and M1 Transition Rates Between $3p_{3/2}$ and $3p_{1/2}$ Levels in $3s^2 3p^k$ Systems
Astron. Astrophys. 406, 741-749 (2003)

Al Z= 13-80	Energy Levels, Wavelengths	E/T

257. K. M. Aggarwal, F. P. Keenan, A. Z. Msezane
Oscillator Strengths for Transitions in C-like Ions Between K XIV and Mn XX
Astron. Astrophys. 401, 377-383 (2003)

C Z= 19-25	Energy Levels, Wavelengths	Th

258. N. W. Zheng, T. Wang
Systematical Study on the Ionization Potential of Excited States in Carbon-like Sequence
Chem. Phys. Lett. 376, 557-565 (2003)

C Z= 6-23	Energy Levels, Wavelengths	E/T

259. K. M. Aggarwal, F. P. Keenan
Electron Impact Excitation of S-like Iron
Mon. Not. R. Astron. Soc. 338, 412-424 (2003)

Fe^{10+}	Energy Levels, Wavelengths	Th

260. K. Kawatsura, K. Takahiro, M. Imai, M. Sataka, K. Komaki, H. Shibata
Ejected Electron Spectra from Highly Excited States in High-Energy Collisions of O^{q+} with He
Nucl. Instrum. Methods Phys. Res. B 205, 528-532 (2003)

O^{4+}	Energy Levels, Wavelengths	Exp
O^{5+}	Energy Levels, Wavelengths	Exp

261. M. Zamkov, E. P. Benis, P. Richard, T. G. Lee, T. J. M. Zouros
Absolute Measurements and Calculation of Triple Electron Capture Cross Sections in Fast 0.5–1.1 MeV/u C^{6+} on Ar Collisions
Nucl. Instrum. Methods Phys. Res. B 205, 522-527 (2003)

C^{3+}	Energy Levels, Wavelengths	Exp

262. E. P. Benis, M. Zamkov, P. Richard, T. J. M. Zouros
Comparison of Two Experimental Techniques for the Determination of the 1s2s ^{3}S Metastable Beam Fraction in Energies B^{3+} Ions
Nucl. Instrum. Methods Phys. Res. B 205, 517-521 (2003)

B^{2+}	Energy Levels, Wavelengths	Exp

263. T. J. M. Zouros, E. P. Benis, T. W. Gorczyca, A. D. González, M. Zamkov, P. Richard
Differential Electron Scattering from Positive Ions Measured by Zero-Degree Ion-Atom Spectroscopy
Nucl. Instrum. Methods Phys. Res. B 205, 508-516 (2003)

Li Z= 5-8	Energy Levels, Wavelengths	Exp

264. R. Hutton, Y. Zou, J. Reyna Almandos, C. Biedermann, R. Radtke, A. Greier, R. Neu
EBIT Spectroscopy of Pm-like Tungsten
Nucl. Instrum. Methods Phys. Res. B 205, 114-118 (2003)

W^{13+}	Energy Levels, Wavelengths	E/T
Ir^{16+}	Energy Levels, Wavelengths	E/T
Au^{18+}	Energy Levels, Wavelengths	E/T
Pb^{21+}	Energy Levels, Wavelengths	E/T
U^{31+}	Energy Levels, Wavelengths	E/T

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Doubly Excited $^3P^e$ Resonances in Heliumlike Ions Below N=3 Threshold
Nucl. Instrum. Methods Phys. Res. B 205, 78-82 (2003)

He Z= 3-10	Energy Levels, Wavelengths	Th

266. O. Yu. Andreev, L. N. Labzowsky, G. Plunien, G. Soff
Evaluation of the Low-Lying Energy Levels of Two- and Three-Electron Configurations for Highly Charged Ions
Nucl. Instrum. Methods Phys. Res. B 205, 25-29 (2003)

He Z= 62-66	Energy Levels, Wavelengths	Th
He Z= 91-93	Energy Levels, Wavelengths	Th
Li Z= 62-66	Energy Levels, Wavelengths	Th
Li Z= 91-93	Energy Levels, Wavelengths	Th
$Nd^{57+-58+}$	Energy Levels, Wavelengths	Th
$Er^{65+-66+}$	Energy Levels, Wavelengths	Th
$Yb^{67+-68+}$	Energy Levels, Wavelengths	Th
$Hg^{77+-78+}$	Energy Levels, Wavelengths	Th

267. J.-P. Champeaux, J.-M. Bizau, D. Cubaynes, C. Blancard, S. Nahar, D. Hitz, J. Bruneau, F. J. Wuilleumier
Measurements and Calculations of Photoionization Cross Sections of Multiply Charged Ions in Ground and Metastable States along the Isonuclear Series of Oxygen: O^{2+} to O^{4+}
Astrophys. J., Suppl. Ser. 148, 583-592 (2003)

O^{2+-4+}	Energy Levels, Wavelengths	E/T

268. A. Wolf, G. Gwinner
Recombination Measurements at Ion Storage Rings
Hyperfine Interact. 146-147, 5-12 (2003)

$\mathbf{F^{6+}}$	Energy Levels, Wavelengths	Exp

269. K. M. Aggarwal, F. P. Keenan, A. Z. Msezane
Energy Levels, Radiative Rates, and Collision Strengths for Transitions in Fe XVII
Astrophys. J., Suppl. Ser. 144, 169-210 (2003)

$\mathbf{Fe^{16+}}$	Energy Levels, Wavelengths	Th

270. F. J. Gálvez, E. Buendía, A. Sarsa
Excited States of Beryllium Isoelectronic Series from Explicitly Correlated Wave Functions
J. Chem. Phys. 118, 6858-6867 (2003)

Be Z= 4-10	Energy Levels, Wavelengths	Th

271. L. Windholz, G. H. Guthöhrlein
Classification of Spectral Lines by Means of Their Hyperfine Structure. Application to Ta I and Ta II Levels
Phys. Scr. T105, 55-60 (2003)

$\mathbf{Ta^{0+--+}}$	Energy Levels, Wavelengths	Exp

272. O. I. Zatsarinnyĭ, L. A. Bandurina, V. F. Gedeon
Resonances in Electron-Impact Integral Excitation Cross Sections of the Magnesium Atom
Opt. Spectrosc. 95, 167-175 (2003)

$\mathbf{Mg^{-}}$	Energy Levels, Wavelengths	Th

273. M. B. Shabaeva
Calculation of the Binding Energy of a Highly Excited Electron in Heavy Be-like Ions
Opt. Spectrosc. 95-1, 1-5 (2003)

$\mathbf{Au^{75+}}$	Energy Levels, Wavelengths	Th
$\mathbf{Pb^{78+}}$	Energy Levels, Wavelengths	Th
$\mathbf{Bi^{79+}}$	Energy Levels, Wavelengths	Th
$\mathbf{U^{88+}}$	Energy Levels, Wavelengths	Th

274. N. W. Zheng, T. Wang
Ionization Potential of Excited States of Be-like Sequence in the Concept of Iso-Spectrum-Level Series
Int. J. Quantum Chem. 93, 344-350 (2003)

Be Z= 4-23	Energy Levels, Wavelengths	E/T

275. Z.-C. Yan, G. W. F. Drake
Bethe Logarithm and QED Shift for Lithium
Phys. Rev. Lett. 91, 113004 (2003)

$\mathbf{^{6}Li}$	Energy Levels, Wavelengths	Th
$\mathbf{^{7}Li}$	Energy Levels, Wavelengths	Th
Li	Energy Levels, Wavelengths	Th

276. C. Brandau, C. Kozhuharov, A. Müller, W. Shi, S. Schippers, T. Bartsch, S. Böhm, C. Böhme, A. Hoffknecht, H. Knopp, N. Grün, W. Scheid, T. Steih, F. Bosch, B. Franzke, P. H. Mokler, F. Nolden, M. Steck, T. Stöhlker, Z. Stachura
Precise Determination of the $\mathbf{2s_{1/2}}$–$\mathbf{2p_{1/2}}$ Splitting in Very Heavy Lithiumlike Ions Utilizing Dielectronic Recombination
Phys. Rev. Lett. 91, 073202 (2003)

^{197}**Au**$^{76+}$	Energy Levels, Wavelengths	Exp
Au^{76+}	Energy Levels, Wavelengths	Exp
^{208}**Pb**$^{79+}$	Energy Levels, Wavelengths	Exp
Pb^{79+}	Energy Levels, Wavelengths	Exp
^{238}**U**$^{89+}$	Energy Levels, Wavelengths	Exp
U^{89+}	Energy Levels, Wavelengths	Exp

277. V. V. Petrunin, M. H. Jacobsen, L. B. Madsen, S. A. Aseyev, T. Andersen
Photodetachment of He$^-$ in the Vicinity of the Two-Electron Escape Threshold
Phys. Rev. Lett. 90, 013002 (2003)

He$^-$	Energy Levels, Wavelengths	Exp

278. A. K. Bhatia, G. A. Doschek
Atomic Data and Spectral Line Intensities for Fe XVII
At. Data Nucl. Data Tables 85, 1-45 (2003)

Fe^{16+}	Energy Levels, Wavelengths	E/T

279. Neerja, G. P. Gupta, A. N. Tripathi, A. Z. Msezane
Energy Levels, Oscillator Strengths, and Transition Probabilities for Fine-Structure Transitions in Mg-like Chlorine
At. Data Nucl. Data Tables 85, 495 (2003)

Cl^{5+}	Energy Levels, Wavelengths	Th

280. U. I. Safronova, M. Sataka, J. R. Albritton, W. R. Johnson, M. S. Safronova
Relativistic Many-Body Calculations of Electric-Dipole Lifetimes, Transition Rates, and Oscillator Strengths for n=3 States in Al-like Ions
At. Data Nucl. Data Tables 84, 1-83 (2003)

Al Z= 15-100	Energy Levels, Wavelengths	Th

281. A. K. Bhatia, R. J. Thomas, E. Landi
Atomic Data and Spectral Line Intensities for Ne III
At. Data Nucl. Data Tables 83, 113-152 (2003)

Ne^{2+}	Energy Levels, Wavelengths	Th

282. X.-L. Wu, B.-C. Gou, F. Wang
Energy, Fine Structure, and Transition Rate of the Doubly Excited ^{3}P^e and ^{3}D^e States for Helium
Can. J. Phys. 81-12, 1419-1425 (2003)

He	Energy Levels, Wavelengths	Th

283. G. El-Machtoub
Contributions of High-n Dielectronic Satellites to Krypton K-Shell Emission Spectra
Can. J. Phys. 81, 1177-1183 (2003)

Kr$^{32+--34+}$	Energy Levels, Wavelengths	Th

284. N. Singh, A. K. Singh, M. Mohan
Level Energies and Oscillator Strengths in Ni(XII)
Can. J. Phys. 81, 861-867 (2003)

Ni^{11+}	Energy Levels, Wavelengths	Th

285. F. O. Borges, G. H. Cavalcanti, A. G. Trigueiros
Weighted Oscillator Strengths and Lifetimes for the S IX and S X Spectra
J. Quant. Spectrosc. Radiat. Transfer 78, 119-129 (2003)

$\mathbf{S}^{8+--9+}$	Energy Levels, Wavelengths	E/T

286. C.-Z. Dong, S. Fritzsche, L.-Y. Xie
Energy Levels and Transition Probabilities for Possible X-ray Laser Lines of Highly Charged Ni-like Ions
J. Quant. Spectrosc. Radiat. Transfer 76, 447-465 (2003)

Ni Z= 74-84 step 2	Energy Levels, Wavelengths	Th

287. R. Barnsley, N. J. Peacock, J. Dunn, I. M. Melnick, I. H. Coffey, J. A. Rainnie, M. R. Tarbutt, N. Nelms
Versatile High Resolution Crystal Spectrometer with X-ray Charge Coupled Device Detector
Rev. Sci. Instrum. 74-4, 2388-2408 (2003)

$\mathbf{Ne}^{9+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Mg}^{11+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Al}^{11+--12+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Si}^{12+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Cl}^{14+--15+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Ar}^{15+--16+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Cr}^{21+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Fe}^{20+}$	Energy Levels, Wavelengths	Exp

288. M. Koide, E. Kayama, T. Osawa, F. Koike, S. Obara, T. Suzuki, S. Hasegawa, S. Ohtani, Y. Azuma, T. Nagata
Variation of 3s Photoionization Resonance Structures in a Serial Atomic Number Species Ar, K, and Ca
J. Phys. Soc. Japan 72, 294-298 (2003)

Ar	Energy Levels, Wavelengths	Exp
K	Energy Levels, Wavelengths	Exp
Ca	Energy Levels, Wavelengths	Exp

289. U. I. Safronova, I. M. Savukov, M. S. Safronova, W. R. Johnson
Third-Order Relativistic Many-Body Calculations of Energies and Lifetimes of Levels Along the Silver Isoelectronic Sequence
Phys. Rev. A 68, 062505 (2003)

Ag Z= 48-54	Energy Levels, Wavelengths	Th
Ag Z= 57-58	Energy Levels, Wavelengths	Th

290. E. L. Snow, R. A. Komara, M. A. Gearba, S. R. Lundeen
Indirect Spin-Orbit Interaction in High-L Rydberg States with $^2\mathbf{S}_{1/2}$ Cores
Phys. Rev. A 74, 049904 (2003)

He	Energy Levels, Wavelengths	Th
$\mathbf{Si}^{2+}$	Energy Levels, Wavelengths	Th
Ba	Energy Levels, Wavelengths	Th

291. J. L. Sanz-Vicario, E. Lindroth
Outer-Shell Photodetachment of the Metastable $\mathbf{Be}^-$ $\mathbf{1s^22s2p^2}$ $^4\mathbf{P}^e$ State
Phys. Rev. A 68, 012702 (2003)

Be^-	Energy Levels, Wavelengths	Th

292. M. J. Vilkas, Y. Ishikawa
Relativistic Multireference Many-Body Perturbation-Theory Calculations on the Multiple Openshell States in Siliconlike Ar and Aluminumlike Fe Ions
Phys. Rev. A 68, 012503 (2003)

Ar^{4+}	Energy Levels, Wavelengths	Th
Fe^{13+}	Energy Levels, Wavelengths	Th

293. T. J. M. Zouros, E. P. Benis, T. W. Gorczyca
Large-Angle Elastic Resonant and Nonresonant Scattering of Electrons from $B^{3+}(1s^2)$ and $B^{4+}(1s)$ Ions: Comparison of Experiment and Theory
Phys. Rev. A 68, 010701 (2003)

B^{2+}–$^{3+}$	Energy Levels, Wavelengths	Exp

294. S.-S. Liaw
Auger Width and Branching Ratios for Berylliumlike $2s^22p^2$ ^3P and $2s2p^3$ ^5S Resonances
Phys. Rev. A 67, 062707 (2003)

Be Z= 3-10	Energy Levels, Wavelengths	Th
B^{+}–$^{2+}$	Energy Levels, Wavelengths	Th

295. U. I. Safronova, W. R. Johnson, A. Shlyaptseva, S. Hamasha
Relativistic Many-Body Calculations of Excitation Energies and Transition Rates from Core-Excited States in Copperlike Ions
Phys. Rev. A 67, 052507 (2003)

Ce^{29+}	Energy Levels, Wavelengths	Th
W^{45+}	Energy Levels, Wavelengths	Th
Au^{50+}	Energy Levels, Wavelengths	Th

296. N. A. Piangos, C. A. Nicolaides
Calculation of n=3 Intrashell Resonance States of He^- and of Isoelectronic Atoms
Phys. Rev. A 67, 052501 (2003)

Li Z= 2-7	Energy Levels, Wavelengths	Th

297. Y. Zou, J. R. Crespo López-Urrutia, J. Ullrich
Observation of Dielectronic Recombination through Two-Electron–One-Photon Correlative Stabilization in an Electron-Beam Ion Trap
Phys. Rev. A 67, 042703 (2003)

Ar^{15+}	Energy Levels, Wavelengths	Exp

298. N. D. Gibson, C. W. Walter, O. Zatsarinny, T. W. Gorczyca, G. D. Ackerman, J. D. Bozek, M. Martins, B. M. McLaughlin, N. Berrah
K-Shell Photodetachment from C^-: Experiment and Theory
Phys. Rev. A 67, 030703 (2003)

C^-	Energy Levels, Wavelengths	E/T

299. M. Bylicki, E. Bednarz
Nonrelativistic Energy of the Hydrogen Negative Ion in the $2p^2$ $^3P^e$ Bound State
Phys. Rev. A 67, 022503 (2003)

H^-	Energy Levels, Wavelengths	Th

300. O. Yu. Andreev, L. N. Labzovsky, G. Plunien, G. Soff
Evaluation of the Low-Lying Energy Levels of Two- and Three-Electron Configurations for Multicharged Ions
Phys. Rev. A 67, 012503 (2003)

He Z= 62-66	Energy Levels, Wavelengths	Th
He Z= 91-93	Energy Levels, Wavelengths	Th
Li Z= 62-66	Energy Levels, Wavelengths	Th
Li Z= 91-93	Energy Levels, Wavelengths	Th
$Nd^{57+--58+}$	Energy Levels, Wavelengths	Th
$Er^{65+--66+}$	Energy Levels, Wavelengths	Th
$Yb^{67+--68+}$	Energy Levels, Wavelengths	Th
$Hg^{77+--78+}$	Energy Levels, Wavelengths	Th

301. K. Koc
Relativistic MR RCI Calculation of Energy Levels and Transition Probabilities of Boron Isoelectronic Sequence
Phys. Scr. 67, 491-499 (2003)

B Z= 10-12	Energy Levels, Wavelengths	Th

302. R. Das, N. C. Deb, K. Roy, A. Z. Msezane
Fine-Structure Energy Levels of Ni XVII and Their Lifetimes
Phys. Scr. 67, 401-406 (2003)

Ni^{16+}	Energy Levels, Wavelengths	Th

303. P. Bogdanovich, R. Karpuškienė, A. Udris
Theoretical Study of the Energy Spectrum of the $2p^3 3p$ in S IX and Related Electron Transitions
Phys. Scr. 67, 395-400 (2003)

S^{8+}	Energy Levels, Wavelengths	Th

304. P. Bogdanovich, R. Karpuškienė, I. Martinson
Ab Initio Wavelengths and Oscillator Strengths for Cl X
Phys. Scr. 67, 44-51 (2003)

Cl^{9+}	Energy Levels, Wavelengths	Th

305. P. Beiersdorfer
Laboratory X-ray Astrophysics
Annu. Rev. Astron. Astrophys. 41, 343-390 (2003)

C^{4+--5+}	Energy Levels, Wavelengths	Exp
N^{5+--6+}	Energy Levels, Wavelengths	Exp
O^{6+--7+}	Energy Levels, Wavelengths	Exp
$Fe^{9+--24+}$	Energy Levels, Wavelengths	Exp

306. I. Savukov
Accurate Calculations of Energies and Oscillator Strengths for Light Neon-like Ions
J. Phys. B 36, 4789-4797 (2003)

Ne Z= 11-18	Energy Levels, Wavelengths	Th

307. V. Jonauskas, L. Partanen, S. Kučas, R. Karazija, M. Huttula, S. Aksela, H. Aksela
Auger Cascade Satellites Following 3d Ionization in Xenon
J. Phys. B 36, 4403-4416 (2003)

Xe^{2+--3+}	Energy Levels, Wavelengths	E/T

308. L. Liang, Y. C. Wang
Calculations of Radiative Lifetimes of Rydberg ns and nd States of B I by Multichannel Quantum Defect Theory
J. Phys. B 36, 4387-4391 (2003)

B	Energy Levels, Wavelengths	E/T

309. S. Schippers, A. Müller, B. M. McLaughlin, A. Aguilar, C. Cisneros, E. D. Emmons, M. F. Gharaibeh, R. A. Phaneuf
Photoionization Studies of the B^+ Valence Shell: Experiment and Theory
J. Phys. B 36, 3371-3381 (2003)

B^+	Energy Levels, Wavelengths	Exp

310. S. S. Tayal
Strong Term Dependence of Wavefunctions and Series Perturbations in Singly Ionized Chlorine
J. Phys. B 36, 3239-3249 (2003)

Cl^+	Energy Levels, Wavelengths	Th

311. M. W. D. Mansfield, J. T. Costello, E. T. Kennedy, J.-P. Mosnier
The 4p-Subshell Photoabsorption Spectrum of Singly Ionized Molybdenum
J. Phys. B 36, 2611-2628 (2003)

Mo^+	Energy Levels, Wavelengths	Exp

312. X.-x. Guan, B.-w. Li, K. T. Taylor
Ionization Energies of Beryllium in Strong Magnetic Fields: A Frozen Core Approximation
J. Phys. B 36, 2465-2477 (2003)

Be	Energy Levels, Wavelengths	Th
Be^{0+--+}	Energy Levels, Wavelengths	Th

313. M. Nemouchi, P. Jönsson, J. Pinard, M. Godefroid
Theoretical Evaluation of the $^{7,9}Be^-$ 2s2p^2 $^4P_{1/2,3/2,5/2}$ Hyperfine Structure Parameters and Be 2s2p $^3P^\circ$ Electron Affinity
J. Phys. B 36, 2189-2201 (2003)

Be^-	Energy Levels, Wavelengths	Th

314. A. K. Bhatia, R. J. Drachman
The Mass Polarization Effect in He-like Ions: First and Second Order
J. Phys. B 36, 1957-1962 (2003)

He Z= 1-4	Energy Levels, Wavelengths	Th
Ne^{8+}	Energy Levels, Wavelengths	Th
D^-	Energy Levels, Wavelengths	Th
T^-	Energy Levels, Wavelengths	Th

315. M. A. Bautista
Electron Impact Excitation of Helium-like Neon
J. Phys. B 36, 1503-1514 (2003)

$\mathbf{Ne^{8+}}$	Energy Levels, Wavelengths	Th

316. G.-X. Chen, A. K. Pradhan, W. Eissner
Breit-Pauli R-Matrix Calculations for Electron Impact Excitation of Fe XVII: A Benchmark Study
J. Phys. B 36, 453-477 (2003)

$\mathbf{Fe^{16+}}$	Energy Levels, Wavelengths	Th

317. F. Wang, B.-C. Gou
Relativistic Energy, Fine Structure and Hyperfine Structure of the Core-Excited States 1s2s2pnp ^{5}P (n = 2–6) and 1s2p^{2}mp ^{5}S$^\circ$ (m = 2–6) for Beryllium
J. Phys. B 36, 331-340 (2003)

Be	Energy Levels, Wavelengths	Th

318. I. D. Petrov, V. L. Sukhorukov, H. Hotop
The Autoionizing Rydberg Series $3p_{1/2}5n\ell'[K']_J$ (ℓ' = 0–5) of Ar: The Influence of Many-Electron Effects on the Resonance Widths
J. Phys. B 36, 119-128 (2003)

Ar	Energy Levels, Wavelengths	E/T

319. L. Natarajan
Relativistic Configuration Interaction Calculations on the Kα X-ray Satellites of Argon
J. Phys. B 36, 105-118 (2003)

$\mathbf{Ar^{9+--15+}}$	Energy Levels, Wavelengths	Th

320. K. Koc
Multireference Relativistic Configuration Interaction Calculations for 2s^{2}2p $^2P_{3/2}$ - $^2P_{1/2}$ M1 and E2 Transitions in the Boron Isoelectronic Sequence
J. Phys. B 36, L93-L98 (2003)

B Z= 10-30	Energy Levels, Wavelengths	Th

321. N. C. Deb, D. S. F. Crothers, Z. Felfli, A. Z. Msezane
Strong Configuration Mixing Among the Fine-Structure Levels of Cl^+
J. Phys. B 36, L47-L55 (2003)

$\mathbf{Cl^{+}}$	Energy Levels, Wavelengths	Th

322. E. P. Benis, T. J. M. Zouros, T. W. Gorczyca, M. Zamkov, P. Richard
Isoelectronic Study of Triply Excited Li-like States
J. Phys. B 36, L341-L348 (2003)

Li Z= 5-9	Energy Levels, Wavelengths	Exp

323. L. I. Podobedova, A. Musgrove, D. E. Kelleher, J. Reader, W. L. Wiese
Atomic Spectral Tables for the Chandra X-ray Observatory. Part I. S VIII-S XIV
J. Phys. Chem. Ref. Data 32-4, 1367-1386 (2003)

$\mathbf{S^{7+--13+}}$	Energy Levels, Wavelengths	E/T

324. J. J. De Groote, M. Masili
Low-Lying Doubly Excited States of the Helium Isoelectronic Series
Few-Body Systems 32, 249-266 (2003)

He Z= 2-6	Energy Levels, Wavelengths	Th

325. K. B. Choudhury, N. C. Deb, K. Roy, A. Z. Msezane
Fine Structure Levels of Cl V and Their Lifetimes
Eur. Phys. J. D 27, 103-107 (2003)

$\mathbf{Cl^{4+}}$	Energy Levels, Wavelengths	Th

326. B.-C. Gou, K.-Z. Yu
Energy and Auger Widths of Triply Excited 3p3p3p ^{2}P° State of Lithium
Chin. Phys. Lett. 20, 839-840 (2003)

Li	Energy Levels, Wavelengths	Th

327. B.-C. Gou, K.-Z. Yu, F. Wang, X.-L. Wu
Energies and Auger Widths of the Triply Excited States of He^-
Chin. Phys. 12, 951-954 (2003)

$\mathbf{He^-}$	Energy Levels, Wavelengths	Th

328. Z.-M. Ge, Z.-W. Wang, Y.-J. Zhou, L.-M. He, G.-G. Liu
The Excitation Energies and Term Energies of the Excited States 1s^{2}ns (n=3,4,5) and 1s^{2}nf (n=4,5) of Lithium-like Systems of Z=11-20
Chin. Phys. 12, 488-494 (2003)

Li Z= 11-20	Energy Levels, Wavelengths	Th

329. P. S. Antsiferov
The Characteristic X-ray Spectra of Free Atoms of Metals
Cent. Eur. J. Phys. 1-2, 268-288 (2003)

Sc-Ni	Energy Levels, Wavelengths	Exp
Mo	Energy Levels, Wavelengths	Exp
Cd	Energy Levels, Wavelengths	Exp
Sn	Energy Levels, Wavelengths	Exp
La-Nd	Energy Levels, Wavelengths	Exp
Sm	Energy Levels, Wavelengths	Exp
Gd-Tm	Energy Levels, Wavelengths	Exp

330. E. P. Benis, M. Zamkov, P. Richard, T. J. M. Zouros, K. R. Karim
Production of the 2s2p^2 ^{2}D^e Triply Excited State in Collisions of Quasi-Free Electrons with He-like B^{3+}, C^{4+}, N^{5+}, O^{6+}, and F^{7+} Ions
Application of Accelerators in Research and Industry: 17th Int'l. Conf., AIP Conference Proceedings 680, New York, NY ¡br¿AIP Press, (2003)

Li Z= 5-9	Energy Levels, Wavelengths	Exp

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Tungsten As a Plasma Facing Material in Fusion Devices
Thesis, Max-Planck-Institut f"ur Plasmaphysik, Garshing , (2003)

$\mathbf{W^{27+}}$$^{--29+}$	Energy Levels, Wavelengths	E/T
$\mathbf{W^{39+}}$	Energy Levels, Wavelengths	E/T
$\mathbf{W^{40+}}$$^{--45+}$	Energy Levels, Wavelengths	E/T

332. T. J. M. Zouros, E. P. Benis, A. D. González, T. G. Lee, P. Richard, T. W. Gorczyca
Resonant (RTE) and Non Resonant (NTE) Transfer Excitation in 4 MeV B^{4+} Collisions with H_2, He and Ar Studied by Zero-Degree Auger Projectile Electron Spectroscopy
Application of Accelerators in Research and Industry: 17th Int'l. Conf., AIP Conference Proceedings 680, New York, NY ¡br¿AIP Press, (2003)

$\mathbf{B^{3+}}$	Energy Levels, Wavelengths	Exp

333. M. Zamkov, E. P. Benis, P. Richard, T. G. Lee, T. J. M. Zouros
Doubly-Excited KLL States Formed in Triple Electron Capture
Application of Accelerators in Research and Industry: 17th Int'l. Conf., AIP Conference Proceedings 680, New York, NY ¡br¿AIP Press, (2003)

$\mathbf{C^{3+--4+}}$	Energy Levels, Wavelengths	Exp

334. P. Neill, C. Harris, A. S. Shlyaptseva, S. Hamasha, S. Hansen, P. Beiersdorfer, U. I. Safronova
The Study of X-ray M-Shell Spectra of W Ions from the Livermore Electron Beam Ion Trap
Lawrence Livermore Lab., Univ. California, Livermore, CA ¡br¿Technical Report, (2003)

$\mathbf{W^{40+--50+}}$	Energy Levels, Wavelengths	E/T
$\mathbf{W^{46+}}$	Energy Levels, Wavelengths	E/T

335. T.-Y. Zhang, N.-W. Zheng, D.-X. Ma
Theoretical calculations of transition probabilities and oscillator strengths for Ti III and Ti IV
Int. J. Quantum Chem. 109, 145-159 (2009)

$\mathbf{Ti^{2+--3+}}$	Trans. prob., Oscill. Strengths	Th

336. U. I. Safronova, R. Mancini
Atomic data for dielectronic satellite lines and dielectronic recombination into Ne^{5+}
At. Data Nucl. Data Tables 95, 54-95 (2009)

$\mathbf{Ne^{5+}}$	Trans. prob., Oscill. Strengths	Th

337. Y.-F. Shen, C. Gao, J.-L. Zeng
Electron impact collision strengths and transition rates for extreme ultraviolet emission from Xe^{10+}
At. Data Nucl. Data Tables 95, 1-53 (2009)

$\mathbf{Xe^{10+}}$	Trans. prob., Oscill. Strengths	Th

338. E. Träbert, J. Hoffmann, C. Krantz, A. Wolf, Y. Ishikawa, J. A. Santana
Atomic lifetime measurements on forbidden transitions of Al-, Si-, P- and S-like ions at a heavy-ion storage ring
J. Phys. B 42, 025002 (2009)

Al Z= 26-28	Trans. prob., Oscill. Strengths	Exp
S Z= 26-28	Trans. prob., Oscill. Strengths	Exp
P Z= 26-28	Trans. prob., Oscill. Strengths	Exp
Si Z= 26-28	Trans. prob., Oscill. Strengths	Exp

339. N. C. Deb, A. Hibbert, Z. Felfli, A. Z. Msezane
[Ti II] lines observed in η Carinae Sr-filament and lifetimes of the metastable states of Ti^{+}
J. Phys. B 42, 015701 (2009)

Ti^{+} Trans. prob., Oscill. Strengths Th

340. U. I. Safronova, R. Bista, R. Bruch, Yu. Ralchenko
Dielectronic recombination of the Xe^{8+} ion and satellite lines of the Xe^{7+} ion
J. Phys. B 42, 015001 (2009)

Xe^{7+} Trans. prob., Oscill. Strengths Th

341. K. M. Aggarwal, F. P. Keenan
Energy levels, radiative rates, and electron impact excitation rates for transitions in O VII
Astron. Astrophys. 489, 1377-1388 (2008)

O^{6+} Trans. prob., Oscill. Strengths Th

342. K. Butler, N. R. Badnell
Atomic data from the IRON project – LXVI. Electron impact excitation of Fe^{18+}
Astron. Astrophys. 489, 1369-1376 (2008)

Fe^{18+} Trans. prob., Oscill. Strengths Th

343. B. Duan, M. A. Bari, J. Y. Zhong, J. Yan, Y. M. Li, J. Zhang
Energy levels and radiative rates for optically allowed and forbidden transitions of Ni XXV ion
Astron. Astrophys. 488, 1155-1157 (2008)

Ni^{24+} Trans. prob., Oscill. Strengths Th

344. G. Del Zanna, I. Rozum, N. R. Badnell
Electron-impact excitation of Be-like Mg
Astron. Astrophys. 487, 1203-1208 (2008)

Mg^{8+} Trans. prob., Oscill. Strengths Th

345. K. M. Aggarwal, K. Hamada, A. Igarashi, V. Jonauskas, F. P. Keenan, S. Nakazaki
Radiative rates and electron impact excitation rates for H-like Ar XVIII
Astron. Astrophys. 487, 383-388 (2008)

Ar^{17+} Trans. prob., Oscill. Strengths Th

346. K. M. Aggarwal, F. P. Keenan
Energy levels, radiative rates, and excitation rates for transitions in O IV
Astron. Astrophys. 486, 1053-1067 (2008)

O^{3+} Trans. prob., Oscill. Strengths Th

347. K. M. Aggarwal, K. Hamada, A. Igarashi, V. Jonauskas, F. P. Keenan, S. Nakazaki
Radiative rates and electron impact excitation rates for H-like Fe XXVI
Astron. Astrophys. 484, 879-885 (2008)

Fe^{25+} Trans. prob., Oscill. Strengths Th

348. M. C. Witthoeft, N. R. Badnell
Atomic data from the IRON Project – LXV. Electron-impact excitation of Fe^{6+}
Astron. Astrophys. 481, 543-551 (2008)

Fe^{6+} Trans. prob., Oscill. Strengths Th

349. F. P. Keenan, D. B. Jess, K. M. Aggarwal, R. J. Thomas, J. W. Brosius, J. M. Davila
Emission lines of Fe X in active region spectra obtained with the Solar Extreme-ultraviolet Research Telescope and Spectrograph
Mon. Not. R. Astron. Soc. 389, 939-948 (2008)

Fe^{9+}	Trans. prob., Oscill. Strengths	Th

350. R. Hamdi, N. Ben Nessib, N. Milovanović, L. Č. Popović, M. S. Dimitrijević, S. Sahal-Bréchot
Atomic data and electron-impact broadening effect in DO white dwarf atmospheres: Si VI
Mon. Not. R. Astron. Soc. 387, 871 (2008)

Si^{5+}	Trans. prob., Oscill. Strengths	Th

351. L. Liang, W. X. Jiang, C. Zhou, L. Zhang
The study of the radiative lifetimes of 3pnd $^1F_3$ and 3pnd $^3D_3$ of Si I
Opt. Commun. 281, 2107-2111 (2008)

Si	Trans. prob., Oscill. Strengths	Th

352. C. Froese Fischer, Yu. Ralchenko
Multiconfiguration Dirac-Hartree-Fock energies and transition probabilities for $2p^4(^3P)3d$–$2p^4(^3P)4f$ transitions in Ne II
Int. J. Mass Spectrom. 271, 85-92 (2008)

Ne^{+}	Trans. prob., Oscill. Strengths	Th

353. Y.-J. Rhee, D.-H. Kwon
Theoretical calculation of the transition spectra of highly charged tungsten ions in the EUV region
Int. J. Mass Spectrom. 271, 45-50 (2008)

$W^{33+--37+}$	Trans. prob., Oscill. Strengths	Th

354. P. Palmeri, P. Quinet, C. Mendoza, M. A. Bautista, J. García, M. C. Witthoeft, T. R. Kallman
Radiative and Auger decay data for modeling nickel K lines
Astrophys. J., Suppl. Ser. 179, 542-552 (2008)

Ni^{25+}	Trans. prob., Oscill. Strengths	Th
Ni^{26+}	Trans. prob., Oscill. Strengths	Th

355. S. S. Tayal
Transition probabilities and electron excitation rates for Fe XIV
Astrophys. J., Suppl. Ser. 178, 359-373 (2008)

Fe^{13+}	Trans. prob., Oscill. Strengths	Th

356. E. Träbert, J. Hoffman, S. Reinhardt, A. Wolf, G. Del Zanna
Measurement of electric-dipole forbidden 3p and 3d level decay rates in Fe XII
J. Phys.: Conf. Ser. 130, 012018 (2008)

Fe^{11+}	Trans. prob., Oscill. Strengths	Exp

357. P. Oliver, A. Hibbert
Transitions among fine-structure levels of Cl I
J. Phys.: Conf. Ser. 130, 012016 (2008)

Cl Trans. prob., Oscill. Strengths Th

358. A. Hibbert, N. C. Deb
Electric dipole transitions among low lying levels of Fe IV
J. Phys.: Conf. Ser. 130, 012012 (2008)

Fe^{3+} Trans. prob., Oscill. Strengths Th

359. N. C. Deb, A. Hibbert
Oscillator strengths for transitions among Fe III levels belonging to the three lowest configurations
J. Phys.: Conf. Ser. 130, 012006 (2008)

Fe^{2+} Trans. prob., Oscill. Strengths Th

360. F. Castelli, S. Johansson, S. Hubrig
Unidentified lines in the spectra of two iron overabundant CP stars: Are they Fe II lines ?
J. Phys.: Conf. Ser. 130, 012003 (2008)

Fe^{+} Trans. prob., Oscill. Strengths Exp

361. S. N. Nahar
Electron-ion recombination and photoionization of Fe XXI
J. Quant. Spectrosc. Radiat. Transfer 109, 2731-2742 (2008)

Fe^{21+} Trans. prob., Oscill. Strengths Th

362. A. Bacławski, J. Musielok
Measurements of relative line strengths in N I multiplets for transition arrays 3s-np (n=3,4,5)
J. Quant. Spectrosc. Radiat. Transfer 109, 2537 (2008)

N Trans. prob., Oscill. Strengths Exp

363. A. Bacławski
Experimental tests of the spectroscopic coupling for neutral oxygen
J. Quant. Spectrosc. Radiat. Transfer 109, 1986-1994 (2008)

O Trans. prob., Oscill. Strengths Exp

364. S. N. Nahar, A. K. Pradhan, C. Sur
Oscillator strengths and radiative transition rates for K_α lines in gold X-ray spectra: 1s-2p transitions
J. Quant. Spectrosc. Radiat. Transfer 109, 1951-1959 (2008)

$Au^{70+--78+}$ Trans. prob., Oscill. Strengths Th

365. S. A. Alexander, R. L. Coldwell
Electric quadrupole oscillator strengths of helium
Int. J. Quantum Chem. 108, 2813-2818 (2008)

He Trans. prob., Oscill. Strengths Th

366. L.-H. Hao, G. Jiang, S.-Q. Song, F. Hu
Relativistic multi-configuration calculations of Kα and Kβ X-ray transitions for highly ionized Mo ions
At. Data Nucl. Data Tables 94, 739-757 (2008)

$Mo^{32+–40+}$	Trans. prob., Oscill. Strengths	Th

367. M. J. Vilkas, Y. Ishikawa, E. Träbert
Relativistic many-body Møller-Plesset perturbation theory calculations of the energy levels and transition rates in Na-like to P-like Xe ions
At. Data Nucl. Data Tables 94, 650-700 (2008)

$Xe^{39+–43+}$	Trans. prob., Oscill. Strengths	Th

368. P. Bogdanovich, R. Karpuškienė
Ab initio oscillator strengths and transition probabilities in oxygen-like Cr XVII
At. Data Nucl. Data Tables 94, 623-649 (2008)

Cr^{16+}	Trans. prob., Oscill. Strengths	Th

369. K. M. Aggarwal, F. P. Keenan, K. D. Lawson
Energy levels and radiative rates for transitions in B-like to F-like Kr ions (Kr XXXII–XXVIII)
At. Data Nucl. Data Tables 94, 323-559 (2008)

$Kr^{27+–32+}$	Trans. prob., Oscill. Strengths	Th

370. S. D. Loch, M. S. Pindzola, C. P. Ballance, D. C. Griffin, J. Colgan, N. R. Badnell, M. G. O'Mullane, H. P. Summers
Generalized collisional radiative model for light elements. Part B: Data for the Be isonuclear sequence
At. Data Nucl. Data Tables 94, 257-321 (2008)

$Be^{0+–3+}$	Trans. prob., Oscill. Strengths	Th
$Be^{+–3+}$	Trans. prob., Oscill. Strengths	Th

371. A. K. Bhatia, E. Landi
Atomic data and spectral line intensities for Ar XV
At. Data Nucl. Data Tables 94, 223-256 (2008)

Ar^{14+}	Trans. prob., Oscill. Strengths	Th

372. M. Raineri, C. Lagorio, S. Padilla, M. Gallardo, J. Reyna Almandos
Weighted oscillator strengths for the Xe IV spectrum
At. Data Nucl. Data Tables 94, 140-159 (2008)

Xe^{3+}	Trans. prob., Oscill. Strengths	Th

373. M. J. Vilkas, J. M. López-Encarnación, Y. Ishikawa
Relativistic multireference Moller-Plesset perturbation theory calculations of the energy levels and transition probabilities in Ne-like xenon, tungsten, and uranium ions
At. Data Nucl. Data Tables 94, 50-70 (2008)

Xe^{44+}	Trans. prob., Oscill. Strengths	Th
W^{64+}	Trans. prob., Oscill. Strengths	Th
U^{82+}	Trans. prob., Oscill. Strengths	Th

374. U. I. Safronova, R. Bista, R. Bruch, H. Merabet
Relativistic many-body calculations of atomic properties in Pd-like ions
Can. J. Phys. 86, 131-149 (2008)

Pd Z= 54-59	Trans. prob., Oscill. Strengths	Th
$\mathbf{Yb^{24+}}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Hg^{34+}}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Th^{44+}}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{U^{46+}}$	Trans. prob., Oscill. Strengths	Th

375. J. M. Bridges, W. L. Wiese
Experimental transition probabilities for infrared lines of Cl I
Phys. Rev. A 78, 062508 (2008)

Cl	Trans. prob., Oscill. Strengths	Exp

376. J. Mitroy
Polarizability of the $\mathbf{Si^{2+}}$ ion
Phys. Rev. A 78, 052515 (2008)

$\mathbf{Si^{2+}}$	Trans. prob., Oscill. Strengths	Th

377. P. Bogdanovich, O. Rancova
Quasirelativistic approach for ab initio study of highly charged ions
Phys. Scr. 78, 045301 (2008)

$\mathbf{Ne^{4+}}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Fe^{20+}}$	Trans. prob., Oscill. Strengths	Th

378. O. Zatsarinny, K. Bartschat, M. Maslov, M. J. Brunger, P. J. O. Teubner
Electron-impact excitation of the $\mathbf{(5d^{10}6s)^2S_{1/2} \rightarrow (5d^96s^2)^2D_{5/2,3/2}}$ transitions in gold atoms
Phys. Rev. A 78, 042713 (2008)

Au	Trans. prob., Oscill. Strengths	Th

379. Y. Ishikawa, M. J. Vilkas
Relativistic many-body calculations of excited-state energies and transition wavelengths for six-valence-electron sulfurlike ions
Phys. Rev. A 78, 042501 (2008)

$\mathbf{Fe^{10+}}$	Trans. prob., Oscill. Strengths	Th

380. M. A. Baig, S. Mahmood, R. Mumtaz, M. Rafiq, M. A. Kalyar, S. Hussain, R. Ali
Oscillator strength measurements of the $\mathbf{3p^5(^2P_{1/2})nd'[3/2]_2}$ and $\mathbf{[5/2]_{2,3}}$ autoionizing resonances in argon
Phys. Rev. A 78, 032524 (2008)

Ar	Trans. prob., Oscill. Strengths	Exp

381. S. E. Yoca, É. Biémont, F. Delahaye, P. Quinet, C. J. Zeippen
Transition probabilities in Au III
Phys. Scr. 78, 025303 (2008)

$\mathbf{Au^{2+}}$	Trans. prob., Oscill. Strengths	Th

382. P. Palmeri, P. Quinet, V. Fivet, É. Biémont, H. Nilsson, L. Engström, H. Lundberg
Lifetime measurements and calculated transition probabilities in W III
Phys. Scr. 78, 015304 (2008)

$\mathbf{W^{2+}}$	Trans. prob., Oscill. Strengths	E/T

383. K. T. Cheng, M. H. Chen, W. R. Johnson
Hyperfine quenching of the 2s2p $^3P_0$ state of berylliumlike ions
Phys. Rev. A 77, 052504 (2008)

Be Z= 6-92	Trans. prob., Oscill. Strengths	Th

384. M. J. Vilkas, Y. Ishikawa, E. Träbert
Electric-dipole 5s-5p transitions in promethiumlike ions
Phys. Rev. A 77, 042510 (2008)

$\mathbf{W^{13+}}$	Trans. prob., Oscill. Strengths	Th

385. H. L. Wei, H. Zhang, C. W. Ma, J. Y. Zhang, X. L. Cheng
The MCDF calculations of n=3-4 transitions in some Al-like ions (Fe^{13+}–Ga^{18+})
Phys. Scr. 77, 035301 (2008)

Al Z= 26-31	Trans. prob., Oscill. Strengths	Th

386. J. Fu, T. W. Gorczyca, D. Nikolic, N. R. Badnell, D. W. Savin, M. F. Gu
Orbital sensitivity in Mg^{2+} dielectronic recombination calculations
Phys. Rev. A 77, 032713 (2008)

$\mathbf{Mg^{2+}}$	Trans. prob., Oscill. Strengths	Th

387. U. I. Safronova, A. S. Safronova, P. Beiersdorfer
Relativistic many-body calculations of lifetimes, rates, and line strengths of multipole transitions between $3l^{-1}4l'$ states in Ni-like ions
Phys. Rev. A 77, 032506 (2008)

Ni Z= 34-100	Trans. prob., Oscill. Strengths	Th

388. W. R. Johnson, U. I. Safronova, A. Derevianko, M. S. Safronova
Relativistic many-body calculation of energies, lifetimes, hyperfine constants, and polarizabilities in ^7Li
Phys. Rev. A 77, 022510 (2008)

$\mathbf{^7Li}$	Trans. prob., Oscill. Strengths	Th
Li	Trans. prob., Oscill. Strengths	Th

389. N. Reshetnikov, L. J. Curtis, M. S. Brown, R. E. Irving
Determination of polarizabilities and lifetimes for the Mg, Zn, Cd and Hg isoelectronic sequences
Phys. Scr. 77, 015301 (2008)

Mg Z= 12-28	Trans. prob., Oscill. Strengths	E/T
Zn Z= 30-47	Trans. prob., Oscill. Strengths	E/T
Cd Z= 48-59	Trans. prob., Oscill. Strengths	E/T
Hg Z= 80-92	Trans. prob., Oscill. Strengths	E/T
$\mathbf{Si^{2+}}$	Trans. prob., Oscill. Strengths	E/T
$\mathbf{P^{3+}}$	Trans. prob., Oscill. Strengths	E/T

390. A. Bacławski, J. Musielok
Transition probabilities for some infrared O I spectral lines–Application for determining excitation temperatures in low temperature plasmas
Spectrochimica Acta, Part B 63, 1315-1319 (2008)

O	Trans. prob., Oscill. Strengths	Exp

391. Z.-W. Wang, Y.-N. Wang, M.-H. Hu, X.-R. Li, Y. Liu
Wavelength and oscillator strength of dipole transition $1s^22p$–$1s^2nd$ for Mn^{22+} ion
Sci. China, Ser. G 51, 1633-1637 (2008)

Mn^{22+}	Trans. prob., Oscill. Strengths	Th

392. J.-H. Yang, P. Li, J.-P. Zhang, H.-L. Li
Relativistic calculations for Be-like iron
Commun. Theor. Phys. 50, 468-472 (2008)

Fe^{22+}	Trans. prob., Oscill. Strengths	Th

393. F. Hu, G. Jiang, W. Hong, L. H. Hao
Wavelengths, transition probabilities, line strengths and oscillator strengths for the Kα and Kβ X-ray transitions in Ni XIX through Ni XXVII
Eur. Phys. J. D 49, 293-296 (2008)

$Ni^{18+ - 26+}$	Trans. prob., Oscill. Strengths	Th

394. H.-L. Li, P. Li, Z. Cheng, H.-R. Ma
Relativistic configuration interaction calculations on Kα x-ray satellites of manganese
Commun. Theor. Phys. 49, 217-220 (2008)

$Mn^{16+ - 23+}$	Trans. prob., Oscill. Strengths	Th

395. H. Nilsson, L. Engström, H. Lundberg, P. Palmeri, V. Fivet, P. Quinet, É. Biémont
Lifetime measurements and transition probability calculations in singly ionized tungsten (W II)
Eur. Phys. J. D 49, 13-19 (2008)

W^{+}	Trans. prob., Oscill. Strengths	E/T

396. K. M. Aggarwal, F. P. Keenan
Comment on "Electron collisional excitation of argon-like Ni XI using the Breit-Pauli R-matrix method" [**Eur. Phys. J. D 42, 235-241 (2007)**] – **Electron impact excitation of Ni XI**
Eur. Phys. J. D 46, 205-213 (2008)

Ni^{10+}	Trans. prob., Oscill. Strengths	Th

397. L. Hamonou, A. Hibbert
Static and dynamic polarizabilities of Mg-like ions
J. Phys. B 41, 245004 (2008)

Mg Z= 12-16	Trans. prob., Oscill. Strengths	Th

398. G. Y. Liang, A. D. Whiteford, N. R. Badnell
R-matrix inner-shell electron-impact excitation of Fe^{15+} including Auger-plus-radiation damping
J. Phys. B 41, 235203 (2008)

Fe^{15+}	Trans. prob., Oscill. Strengths	Th

399. A. Bacławski
Experimental transition probabilities and J-file sum rule test for the transition array 3p-3d in neutral neon
J. Phys. B 41, 225701 (2008)

Ne Trans. prob., Oscill. Strengths Exp

400. D. C. Griffin, C. P. Ballance, D. M. Mitnik, J. C. Berengut
Dirac R-matrix calculations of electron-impact excitation of neon-like krypton
J. Phys. B 41, 215201 (2008)

Kr^{26+} Trans. prob., Oscill. Strengths Th

401. C. P. Ballance, D. C. Griffin
Intermediate-coupling R-matrix calculations of electron-impact excitation of Fe^{5+}
J. Phys. B 41, 195205 (2008)

Fe^{5+} Trans. prob., Oscill. Strengths Th

402. A. E. Kingston, A. Hibbert
Transitions from the $3p^6 4s$ state of Ti IV
J. Phys. B 41, 155001 (2008)

Ti^{3+} Trans. prob., Oscill. Strengths Th

403. N. C. Deb, A. Hibbert
E1 transitions among the levels of the $3d^5$, $3d^4 4s$ and $3d^4 4p$ configurations in Fe IV
J. Phys. B 41, 081007 (2008)

Fe^{3+} Trans. prob., Oscill. Strengths Th

404. J. J. Zhu, B. C. Gou, Y. D. Wang
Energies, fine structure, hyperfine structure and Auger widths of the core-excited states for the Li isoelectronic sequence
J. Phys. B 41, 065702 (2008)

Li Z= 10-20 Trans. prob., Oscill. Strengths Th

405. S. Mandal, G. Dixit, B. K. Sahoo, R. K. Chaudhuri, S. Majumder
Theoretical spectroscopic studies of the atomic transitions and lifetimes of low-lying states in Ti IV
J. Phys. B 41, 055701 (2008)

Ti^{3+} Trans. prob., Oscill. Strengths Th

406. L. Argenti, R. Moccia
Helium 2^3S photoionization up to the N = 5 threshold
J. Phys. B 41, 035002 (2008)

He Trans. prob., Oscill. Strengths Th

407. V. Fivet, É. Biémont, L. Engström, H. Lundberg, H. Nilsson, P. Palmeri, P. Quinet
Radiative lifetime measurements and calculations in doubly ionized tantalum (Ta III)
J. Phys. B 41, 015702 (2008)

Ta^{2+} Trans. prob., Oscill. Strengths E/T

408. D. E. Kelleher, L. I. Podobedova
Atomic transition probabilities of silicon. A critical compilation
J. Phys. Chem. Ref. Data 37, 1285-1501 (2008)

$\mathbf{Si}^{0+--10+}$	Trans. prob., Oscill. Strengths	E/T
$\mathbf{Si}^{0+--12+}$	Trans. prob., Oscill. Strengths	E/T

409. D. E. Kelleher, L. I. Podobedova
Atomic transition probabilities of aluminum. A critical compilation
J. Phys. Chem. Ref. Data 37, 709-911 (2008)

$\mathbf{Al}^{0+--9+}$	Trans. prob., Oscill. Strengths	E/T
$\mathbf{Al}^{0+--12+}$	Trans. prob., Oscill. Strengths	E/T

410. Z.-W. Wang, X.-R. Li, M.-H. Hu, Y. Liu, Y.-N. Wang
Transition energy and oscillator strength of $1s^22p$–$1s^2nd$ for Fe^{23+} ion
Chin. Phys. Lett. 25, 2004-2007 (2008)

$\mathbf{Fe}^{23+}$	Trans. prob., Oscill. Strengths	Th

411. L.-Y. Xie, C.-Z. Dong, J. Jiang, J.-J. Wan, J. Yan
Two-electron and one-photon transitions in highly charged nickel-like ions
Chin. Phys. B 17, 3294-3299 (2008)

Ni Z= 47-92	Trans. prob., Oscill. Strengths	Th

412. Z.-W. Wang, Y. Liu, M.-H. Hu, X.-R. Li, Y.-N. Wang
Transition energy and dipole oscillator strength for $1s^22p$–$1s^2nd$ of Cr^{21+} ion
Chin. Phys. B 17, 2909-2913 (2008)

$\mathbf{Cr}^{21+}$	Trans. prob., Oscill. Strengths	Th

413. L. Liang, C. Zhou, L. Zhang
Energy levels and radiative lifetimes of 3pns $^3P_0$ and 3pnd $^3P_0$ series of Si I
Chin. Opt. Lett. 6-11, 804-806 (2008)

Si	Trans. prob., Oscill. Strengths	Th

414. A. K. S. Jha, S. Tyagi, M. Mohan
Photoionization cross section for Ni XIX
Astrophys. J., Suppl. Ser. 173, 177-183 (2007)

$\mathbf{Ni}^{19+}$	Trans. prob., Oscill. Strengths	Th

415. J. Huang, Q. Zhao, G. Jiang
Energy levels, transition probabilities, and electron impact excitation collision strengths for Xe XXVII
At. Data Nucl. Data Tables 93, 864-906 (2007)

$\mathbf{Xe}^{26+}$	Trans. prob., Oscill. Strengths	Th

416. S. Kotochigova, K. P. Kirby, I. Tupitsyn
Ab initio fully relativistic calculations of X-ray spectra of highly charged ions
Phys. Rev. A 76, 052513 (2007)

$\mathbf{Fe}^{18+}$	Trans. prob., Oscill. Strengths	Th

417. P. Bogdanovich, H.-S. Chou
Comparison of two theoretical methods for studying 2-2 transitions in beryllium isoelectronic sequence
Lithuanian Phys. J. 47-4, 387-395 (2007)

Be Z= 4-28 Trans. prob., Oscill. Strengths Th

418. N. Verma, A. K. S. Jha, M. Mohan
Electron collisional excitation of argon-like Ni XI using the Breit-Pauli R-matrix method
Eur. Phys. J. D 42, 235-241 (2007)

Ni^{10+} Trans. prob., Oscill. Strengths Th

419. R. Mayo, M. Ortiz, F. Parente, J. P. Santos
Experimental and theoretical transition probabilities for lines arising from the 6p configurations of Au II
J. Phys. B 40, 4651-4660 (2007)

Au^{+} Trans. prob., Oscill. Strengths E/T

420. Yu. Ralchenko, J. Reader, J. M. Pomeroy, J. N. Tan, J. D. Gillaspy
Spectra of W^{39+}–W^{47+} in the 12–20 nm region observed with an EBIT light source
J. Phys. B 40, 3861-3875 (2007)

$W^{39+--44+}$ Trans. prob., Oscill. Strengths Th
$W^{42+--46+}$ Trans. prob., Oscill. Strengths Th
$W^{46+--47+}$ Trans. prob., Oscill. Strengths Th

421. F. de Gaufridy de Dortan
Influence of configuration interaction on satellite lines of xenon and tin in the EUV region
J. Phys. B 40, 599-615 (2007)

Xe^{10+} Trans. prob., Oscill. Strengths Th

422. L. Wallace, K. Hinkle
The 236.6–5400.0 nm Spectrum of Cr I
Astrophys. J. 700, 720-726 (2009)

Cr Energy Levels, Wavelengths Exp

423. G. Y. Liang, T. M. Baumann, J. R. Crespo López-Urrutia, S. W. Epp, H. Tawara, A. Gonchar, P. H. Mokler, G. Zhao, J. Ullrich
Extreme-Ultraviolet Spectroscopy of Fe VI–Fe XV and Its Diagnostic Application for Electron Beam Ion Trap Plasmas
Astrophys. J. 696, 2275-2289 (2009)

$Fe^{5+--14+}$ Energy Levels, Wavelengths Exp

424. A. Graf, P. Beiersdorfer, G. V. Brown, M. F. Gu
Measurement and Modeling of Na-like Fe XVI Inner-Shell Satellites Between 14.5 Å and 18 Å
Astrophys. J. 695, 818-824 (2009)

Fe^{15+} Energy Levels, Wavelengths Exp

425. B. Reed, C.-S. Lam, Y.-C. Chang, Xi Xing, D.-S. Yang, C. Y. Ng
A High-Resolution Photoionization Study of ^{56}Fe Using a Vacuum Ultraviolet Laser
Astrophys. J. 693, 940-945 (2009)

Fe	Energy Levels, Wavelengths	Exp

426. J. K. Saha, S. Bhattacharyya, T. K. Mukherjee, P. K. Mukherjee
Doubly Excited ^{1,3}D° States of Two-Electron Atoms
Chem. Phys. Lett. 478, 292-294 (2009)

He Z= 3-8	Energy Levels, Wavelengths	Th

427. N. Singh, H. S. Vora
On the Hyperfine Spectral Lines of an Atomic Copper Vapor Laser
Opt. Commun. 282, 1393-1398 (2009)

Cu	Energy Levels, Wavelengths	Exp

428. K. Kawatsura, K. Takahiro, M. Sataka, M. Imai, H. Sugai, K. Ozaki, H. Shibata, K. Komaki
Autoionization of N^{q+} (q = 1–3) Rydberg States Produced in High-Energy Collisions with He
Nucl. Instrum. Methods Phys. Res. B 267, 901-904 (2009)

N^{+--3+}	Energy Levels, Wavelengths	Exp

429. M. C. Witthoeft, M. A. Bautista, C. Mendoza, T. R. Kallman, P. Palmeri, P. Quinet
K-Shell Photoionization and Photoabsorption of Ne, Mg, Si, S, Ar, and Ca
Astrophys. J., Suppl. Ser. 182, 127-130 (2009)

He Z= 10-18 step 2	Energy Levels, Wavelengths	Th
Li Z= 10-18 step 2	Energy Levels, Wavelengths	Th
Be Z= 10-18 step 2	Energy Levels, Wavelengths	Th
B Z= 10-18 step 2	Energy Levels, Wavelengths	Th
C Z= 10-18 step 2	Energy Levels, Wavelengths	Th
N Z= 10-18 step 2	Energy Levels, Wavelengths	Th
O Z= 10-18 step 2	Energy Levels, Wavelengths	Th
F Z= 10-18 step 2	Energy Levels, Wavelengths	Th
Ne Z= 10-18 step 2	Energy Levels, Wavelengths	Th

430. V. A. Dzuba
An Universal Algorithm of Calculating Terms of Atomic Many-Body Perturbation Theory
Comput. Phys. Commun. 180, 392-400 (2009)

Na	Energy Levels, Wavelengths	Th
Cu	Energy Levels, Wavelengths	Th
Ga	Energy Levels, Wavelengths	Th

431. C. Biedermann, R. Radtke, R. Seidel, T. Pütterich
Spectroscopy of Highly Charged Tungsten Ions Relevant to Fusion Plasmas
Phys. Scr. T134, 014026 (2009)

$W^{45+--50+}$	Energy Levels, Wavelengths	Exp
$W^{60+--64+}$	Energy Levels, Wavelengths	Exp

432. O. Zatsarinny, K. Bartschat
B-Spline Calculations of Oscillator Strengths in Noble Gases
Phys. Scr. T134, 014020 (2009)

Ne	Energy Levels, Wavelengths	Th
Ar	Energy Levels, Wavelengths	Th
Kr	Energy Levels, Wavelengths	Th
Xe	Energy Levels, Wavelengths	Th

433. J. Reyna Almandos, F. Bredice, M. Raineri, M. Gallardo
Spectral Analysis of Ionized Noble Gases and Implications for Astronomy and Laser Studies
Phys. Scr. T134, 014018 (2009)

$\mathbf{Xe}^{2+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Xe}^{4+-8+}$	Energy Levels, Wavelengths	Exp

434. E. O. Le Bigot, S. Boucard, D. S. Covita, D. Gotta, A. Gruber, A. Hirtl, H. Fuhrmann, P. Indelicato, J. M. F. dos Santos, S. Schlesser, L. M. Simons, L. Stingelin, M. Trassinelli, J. F. C. A. Veloso, A. Wasser, J. Zmeskal
High-Precision X-ray Spectroscopy in Few-Electron Ions
Phys. Scr. T134, 014015 (2009)

$\mathbf{Ar}^{16+}$	Energy Levels, Wavelengths	Exp

435. S. Johansson
A Half-Life with Fe II: Tight Bonds and Loose Ends
Phys. Scr. T134, 014013 (2009)

$\mathbf{Fe}^{+}$	Energy Levels, Wavelengths	Exp

436. M. Aldenius
Laboratory Wavelengths for Cosmological Constraints on Varying Fundamental Constants
Phys. Scr. T134, 014008 (2009)

$\mathbf{C}^{3+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Mg}^{0+-+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Al}^{+-2+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Si}^{+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Si}^{3+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Ti}^{+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Cr}^{+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Mn}^{+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Fe}^{+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Ni}^{+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Zn}^{+}$	Energy Levels, Wavelengths	Exp

437. D. Figgen, K. A. Peterson, M. Dolg, H. Stoll
Energy-Consistent Pseudopotentials and Correlation Consistent Basis Sets for the 5d Elements Hf-Pt
J. Chem. Phys. 130, 164108 (2009)

$\mathbf{Hf\text{-}Pt}^{-}$	Energy Levels, Wavelengths	Th
Hf-Pt	Energy Levels, Wavelengths	Th

438. O. Zatsarinny, K. Bartschat, J. Mitroy, J.-Y. Zhang
Multipole Polarizabilities and Long-Range Interactions of the Fluorine Atom
J. Chem. Phys. 130, 124310 (2009)

F	Energy Levels, Wavelengths	Th

439. T.-Y. Zhang, N.-W. Zheng
Theoretical Study of Energy Levels and Transition Probabilities of Boron Atom
Acta Phys. Pol. A 116-2, 141-153 (2009)

B	Energy Levels, Wavelengths	Th

440. T.-Y. Zhang, N.-W. Zheng
Calculations of Energy Levels Using the Weakest Bound Electron Potential Model Theory
Acta Phys. Pol. A 115, 629-635 (2009)

Be Z= 4-24	Energy Levels, Wavelengths	Th
Na Z= 11-31	Energy Levels, Wavelengths	Th
Al Z= 13-29	Energy Levels, Wavelengths	Th

441. F. W. King
High-Precision Calculations of the Hyperfine Constants for the Low-Lying Excited ^{2}S States of Be^+
J. Phys. Chem. A 113, 4110-4116 (2009)

Be^+	Energy Levels, Wavelengths	Th

442. J. A. Santana, Y. Ishikawa
Effective Collision Strengths for Electron-Impact Excitation of Transitions within the Ground $1s^2 2s^2 2p^4$ Manifold of O-like Fe^{18+}
Int. J. Quantum Chem. 109, 1920-1927 (2009)

Fe^{18+}	Energy Levels, Wavelengths	E/T

443. M. Kavčič, M. Žitnik, K. Bučar, A. Mihelič, M. Štuhec, J. Szlachetko, W. Cao, R. Alonso Mori, P. Glatzel
Separation of Two-Electron Photoexcited Atomic Processes near the Inner-Shell Threshold
Phys. Rev. Lett. 102, 143001 (2009)

Ar	Energy Levels, Wavelengths	E/T
Ar^+	Energy Levels, Wavelengths	E/T

444. A. Tkatchenko, M. Scheffler
Accurate Molecular van der Waals Interactions from Ground-State Electron Density and Free-Atom Reference Data
Phys. Rev. Lett. 102, 073005 (2009)

H	Energy Levels, Wavelengths	Th
C-F	Energy Levels, Wavelengths	Th
Si	Energy Levels, Wavelengths	Th
S-Cl	Energy Levels, Wavelengths	Th

445. K. M. Aggarwal, F. P. Keenan, K. D. Lawson
Electron Impact Excitation of Kr XXXII
At. Data Nucl. Data Tables 95, 607-750 (2009)

Kr^{31+}	Energy Levels, Wavelengths	Th

446. E. Landi, A. K. Bhatia
Atomic Data and Spectral Line Intensities for Ni XXV
At. Data Nucl. Data Tables 95, 547-576 (2009)

Ni^{24+}	Energy Levels, Wavelengths	Th

447. A. E. Kramida, T. Shirai
Energy Levels and Spectral Lines of Tungsten, W III through W LXXIV
At. Data Nucl. Data Tables 95, 305-474 (2009)

$\mathbf{W}^{2+-6+}$	Energy Levels, Wavelengths	E/T
$\mathbf{W}^{2+-7+}$	Energy Levels, Wavelengths	E/T
$\mathbf{W}^{2+-73+}$	Energy Levels, Wavelengths	E/T
$\mathbf{W}^{27+-49+}$	Energy Levels, Wavelengths	E/T
$\mathbf{W}^{50+}$	Energy Levels, Wavelengths	E/T
$\mathbf{W}^{52+}$	Energy Levels, Wavelengths	E/T
$\mathbf{W}^{54+-62+}$	Energy Levels, Wavelengths	E/T
$\mathbf{W}^{54+-64+}$	Energy Levels, Wavelengths	E/T
$\mathbf{W}^{63+}$	Energy Levels, Wavelengths	E/T
$\mathbf{W}^{64+}$	Energy Levels, Wavelengths	E/T
$\mathbf{W}^{72+}$	Energy Levels, Wavelengths	E/T
$\mathbf{W}^{73+}$	Energy Levels, Wavelengths	E/T

448. H.-J. Hou, G. Jiang, F. Hu, L.-H. Hao
Relativistic Configuration Interaction Calculations for the Kα and Kβ X-ray Satellites of Iron
At. Data Nucl. Data Tables 95, 125-140 (2009)

$\mathbf{Fe}^{16+-24+}$	Energy Levels, Wavelengths	Th

449. U. I. Safronova, A. S. Safronova
Relativistic Many-Body Calculations of Excitation Energies and Transition Rates from Core-Excited States in Silverlike Ions
Can. J. Phys. 87, 83-94 (2009)

Ag Z= 50-100	Energy Levels, Wavelengths	Th
$\mathbf{I}^{6+}$	Energy Levels, Wavelengths	Th
$\mathbf{Xe}^{7+}$	Energy Levels, Wavelengths	Th
$\mathbf{Cs}^{8+}$	Energy Levels, Wavelengths	Th
$\mathbf{Er}^{21+}$	Energy Levels, Wavelengths	Th
$\mathbf{Yb}^{23+}$	Energy Levels, Wavelengths	Th
$\mathbf{W}^{27+}$	Energy Levels, Wavelengths	Th

450. S. A. Blundell
Calculation of QED Corrections in Highly Charged Zn-like Ions
Can. J. Phys. 87, 55-65 (2009)

Zn Z= 70-92	Energy Levels, Wavelengths	Th

451. P. Beiersdorfer
Precision Energy-Level Measurements and QED of Highly Charged Ions
Can. J. Phys. 87, 9-14 (2009)

$\mathbf{C}^{4+}$	Energy Levels, Wavelengths	Exp
$\mathbf{C}^{5+}$	Energy Levels, Wavelengths	Exp
$\mathbf{N}^{5+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Ne}^{4+-7+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Zn}^{29+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Yb}^{60+}$	Energy Levels, Wavelengths	Exp
$\mathbf{U}^{89+}$	Energy Levels, Wavelengths	Exp

452. P. Głowacki, Z. Uddin, G. H. Guthöhrlein, L. Windholz, J. Dembczyński
A Study of the Hyperfine Structure of Ta I Lines Based on Fourier Transform Spectra and Laser-Induced Fluorescence
Phys. Scr. 80, 025301 (2009)

Ta	Energy Levels, Wavelengths	Exp

453. M. He, K. T. Therkildsen, B. B. Jensen, A. Brusch, J. W. Thomsen, S. G. Porsev
Isotope Shifts of the (3s3p) $^3P_{0,1,2}$–(3s4s) $^3S_1$ Mg I Transitions
Phys. Rev. A 80, 024501 (2009)

Mg	Energy Levels, Wavelengths	Exp

454. V. Batteiger, S. Knünz, M. Herrmann, G. Saathoff, H. A. Schüssler, B. Bernhardt, T. Wilken, R. Holzwarth, T. W. Hänsch, Th. Udem
Precision Spectroscopy of the 3s-3p Fine-Structure Doublet in Mg^+
Phys. Rev. A 80, 022503 (2009)

Mg^+	Energy Levels, Wavelengths	Exp

455. M. S. Safronova, M. G. Kozlov, W. R. Johnson, D. Jiang
Development of a Configuration-Interaction Plus All-Order Method for Atomic Calculations
Phys. Rev. A 80, 012516 (2009)

Mg	Energy Levels, Wavelengths	Th
Ca	Energy Levels, Wavelengths	Th
Zn	Energy Levels, Wavelengths	Th
Sr	Energy Levels, Wavelengths	Th
Cd	Energy Levels, Wavelengths	Th
Ba	Energy Levels, Wavelengths	Th
Hg	Energy Levels, Wavelengths	Th

456. J. D. Gillaspy, I. N. Draganić, Yu. Ralchenko, J. Reader, J. N. Tan, J. M. Pomeroy, S. M. Brewer
Measurement of the D-Line Doublet in High-Z Highly Charged Sodiumlike Ions
Phys. Rev. A 80, 010501 (2009)

Na Z= 72-74	Energy Levels, Wavelengths	Exp
Si Z= 72-74	Energy Levels, Wavelengths	Exp
Al Z= 72-74	Energy Levels, Wavelengths	Exp
Mg Z= 72-74	Energy Levels, Wavelengths	Exp
$Au^{67+--68+}$	Energy Levels, Wavelengths	Exp

457. J. A. Santana, Y. Ishikawa, E. Träbert
Multireference Møller-Plesset Perturbation Theory Results on Levels and Transition Rates in Al-like Ions of Iron Group Elements
Phys. Scr. 79, 065301 (2009)

Al Z= 19-32	Energy Levels, Wavelengths	Th

458. A. M. Frolov, D. M. Wardlaw
Triplet 2^3S States in Four-Electron Be-like Ions: Bound-State Properties and Hyperfine-Structure Splitting
Phys. Rev. A 79, 064501 (2009)

Be Z= 4-12	Energy Levels, Wavelengths	Th
Be	Energy Levels, Wavelengths	Th

459. L.-Y. Tang, Z.-C. Yan, T.-Y. Shi, J. F. Babb
Nonrelativistic Ab Initio Calculations for 2 ^2S, 2 ^2P, and 3 ^2D Lithium Isotopes: Applications to Polarizabilities and Dispersion Interactions
Phys. Rev. A 79, 062712 (2009)

Li	Energy Levels, Wavelengths	Th

460. L. Natarajan, A. Natarajan
Characteristic Trends in the X-ray Rates from the 2s3p Configuration of He-like Ions
Phys. Rev. A 79, 062513 (2009)

He Z= 14-54	Energy Levels, Wavelengths	Th

461. S. N. Nahar, J. Oelgoetz, A. K. Pradhan
Recombination Rate Coefficients for KLL Dielectronic Satellite Lines of Fe XXV and Ni XXVII
Phys. Scr. 79, 055301 (2009)

$\mathbf{Fe^{23+}}$	Energy Levels, Wavelengths	Th
$\mathbf{Ni^{25+}}$	Energy Levels, Wavelengths	Th

462. J. Bieroń, C. Froese Fischer, P. Indelicato, P. Jönsson, P. Pyykkö
Complete-Active-Space Multiconfiguration Dirac-Hartree-Fock Calculations of Hyperfine-Structure Constants of the Gold Atom
Phys. Rev. A 79, 052502 (2009)

Au	Energy Levels, Wavelengths	Th

463. C. Bahrim, V. V. Khadilkar
Alignment Relaxation of $\mathbf{Ne^*(2p_i[J=1])}$ Atoms Induced by Collisions with $\mathbf{He(1s^2)}$ Atoms in Discharges at Temperatures from 10 to 3000 K
Phys. Rev. A 79, 042715 (2009)

Ne	Energy Levels, Wavelengths	Th

464. M. G. Su, C. Z. Dong, N. Murphy, G. O'Sullivan
Analysis of the XUV Photoabsorption Spectrum of $\mathbf{Au^{2+}}$, $\mathbf{Au^{3+}}$, and $\mathbf{Au^{4+}}$
Phys. Rev. A 79, 042507 (2009)

$\mathbf{Au^{2+}-^{4+}}$	Energy Levels, Wavelengths	Exp

465. S. N. Nahar, W. Eissner, C. Sur, A. K. Pradhan
A Comprehensive Set of UV and X-ray Radiative Transition Rates for Fe XVI
Phys. Scr. 79, 035401 (2009)

$\mathbf{Fe^{15+}}$	Energy Levels, Wavelengths	Th

466. J.-M. Bizau, J.-P. Mosnier, E. T. Kennedy, D. Cubaynes, F. J. Wuilleumier, C. Blancard, J.-P. Champeaux, F. Folkmann
Photoionization of the Ne-like $\mathbf{Si^{4+}}$ Ion in Ground and Metastable States in the 110–184-eV Photon Energy Range
Phys. Rev. A 79, 033407 (2009)

$\mathbf{Si^{4+}}$	Energy Levels, Wavelengths	Exp

467. V. G. Ivanov, S. G. Karshenboim
Recoil Correction to the Decay Rate of 2p States in Hydrogenlike Atoms
Phys. Rev. A 79, 032518 (2009)

H Z= 1-100	Energy Levels, Wavelengths	Th

468. M. Puchalski, K. Pachucki
Fine and Hyperfine Splitting of the 2P State in Li and $\mathbf{Be^+}$
Phys. Rev. A 79, 032510 (2009)

Li	Energy Levels, Wavelengths	Th
Be^{+}	Energy Levels, Wavelengths	Th

469. X.-L. Wang, C.-Z. Dong, C.-C. Sang
Theoretical Study on Ne 1s Photoionization and Corresponding Auger Decay Processes
Acta Phys. Sin. 58-8, 5297-5303 (2009)

Ne	Energy Levels, Wavelengths	Th

470. J.-J. Zhu, B.-C. Gou
Electron Correlation Effects of the Highly-Doubly-Excited Resonances for He-like Ions
Acta Phys. Sin. 58-8, 5285-5290 (2009)

O^{6+}	Energy Levels, Wavelengths	Th

471. S.-D. Zheng, B.-W. Li, J.-G. Li, C.-Z. Dong, W.-Y. Yuan
The Influences of the Finite Nuclear Size Effects on the Energy Levels and Wavefunctions of Hydrogen-like Ions
Acta Phys. Sin. 58-3, 1556-1562 (2009)

H Z= 20-100	Energy Levels, Wavelengths	Th

472. C. Chen, B. C. Gou
Hyperfine-Structure Studies of the $1s^22snp$ (n = 2, 3) ^3P States for the Beryllium Isoelectronic Sequence
Eur. Phys. J. D 54, 545-550 (2009)

Be Z= 4-10	Energy Levels, Wavelengths	Th
Be	Energy Levels, Wavelengths	Th
B^{+}	Energy Levels, Wavelengths	Th
C^{2+}	Energy Levels, Wavelengths	Th
N^{3+}	Energy Levels, Wavelengths	Th
O^{4+}	Energy Levels, Wavelengths	Th
F^{5+}	Energy Levels, Wavelengths	Th
Ne^{6+}	Energy Levels, Wavelengths	Th

473. L. Zhuo, B. C. Gou, J. J. Zhu
Inner-Shell Excited Quartet States in Li-like O^{5+} and Ne^{7+} Ions
Eur. Phys. J. D 54, 1-8 (2009)

O^{5+}	Energy Levels, Wavelengths	Th
Ne^{7+}	Energy Levels, Wavelengths	Th

474. I. D. Petrov, V. L. Sukhorukov, M. W. Ruf, H. Hotop
Odd Autoionizing $2p^5_{1/2}n(s'/d')$ Resonances of Ne Excited from the $2p^53p[K]_J$ States
Eur. Phys. J. D 53, 289-302 (2009)

Ne	Energy Levels, Wavelengths	E/T

475. K. Koc
Relativistic Multireference Configuration Interaction Calculations of Lifetime of $2s^22p$ $^2P_{3/2}$ Level Along Boron Isoelectronic Sequence
Eur. Phys. J. D 53, 9-14 (2009)

B Z= 14-30	Energy Levels, Wavelengths	Th

476. Z. Uddin, L. Windholz
The Investigation of the Hyperfine Structure of Ta II
Chin. J. Phys. 47-4, 454-464 (2009)

Ta^{+}	Energy Levels, Wavelengths	Exp

477. J.-T. Hsiao, H.-T. Shiao, K.-N. Huang
Doubly-Excited Triplet Rydberg Series of the B^{+} Ion
Chin. J. Phys. 47-2, 173-183 (2009)

B^{+}	Energy Levels, Wavelengths	Th

478. U. I. Safronova, A. S. Safronova, P. Beiersdorfer
Excitation Energies, Radiative and Autoionization Rates, Dielectronic Satellite Lines and Dielectronic Recombination Rates for Excited States of Mg-like W from Na-like W
J. Phys. B 42, 165010 (2009)

W^{62+}	Energy Levels, Wavelengths	Th

479. K. B. MacAdam, S. F. Dyubko, V. A. Efremov, V. G. Gerasimov, A. S. Kutsenko
Laser-Microwave Spectroscopy of Cu I Atoms in S, P, D, F and G Rydberg States
J. Phys. B 42, 165009 (2009)

Cu	Energy Levels, Wavelengths	Exp

480. E. Yu. Il'inova, A. A. Kamenski, V. D. Ovsiannikov
Hyperpolarizabilities of Rydberg States in Helium and Alkali-Metal Atoms
J. Phys. B 42, 145004 (2009)

He	Energy Levels, Wavelengths	Th
Li	Energy Levels, Wavelengths	Th
Na	Energy Levels, Wavelengths	Th
K	Energy Levels, Wavelengths	Th
Rb	Energy Levels, Wavelengths	Th
Cs	Energy Levels, Wavelengths	Th

481. T. Osawa, S. Obara, T. Nagata, Y. Azuma, F. Koike
Observation and Analysis of 3s-np Resonance Excitation in Cr, Mn and Fe Atoms
J. Phys. B 42, 085005 (2009)

Cr	Energy Levels, Wavelengths	Exp
Mn	Energy Levels, Wavelengths	Exp
Fe	Energy Levels, Wavelengths	Exp

482. M. Machida, A. M. Daltrini, J. H. F. Severo, I. C. Nascimento, E. K. Sanada, J. I. Elizondo, Y. K. Kuznetsov
VUV Spectral Line Emission Measurements in the TCABR Tokamak
Braz. J. Phys. 39, 270-274 (2009)

N^{2+}–$^{4+}$	Energy Levels, Wavelengths	Exp
O^{+}–$^{6+}$	Energy Levels, Wavelengths	Exp

483. X.-L. Wang, W.-L. Lu, X. Gao, J.-M. Li
Effect of Electron Correlations and Breit Interactions on Ground-State Fine-Structures Along the Nitrogen-like Isoelectronic Sequence
Chin. Phys. Lett. 26, 043101 (2009)

N Z= 7-100	Energy Levels, Wavelengths	Th
$\mathbf{O^{+}}$	Energy Levels, Wavelengths	Th
$\mathbf{Ti^{15+}}$	Energy Levels, Wavelengths	Th
$\mathbf{Zn^{23+}}$	Energy Levels, Wavelengths	Th
$\mathbf{Fm^{93+}}$	Energy Levels, Wavelengths	Th

484. S. Şakiroğlu, K. Akgüngör, İ. Sökmen
Ground State Energy of He Isoelectronic Sequence Treated Variationally via Hylleraas-like Wavefunction
Chin. Phys. B 18, 2238-2243 (2009)

He Z= 1-6	Energy Levels, Wavelengths	Th

485. C. Biedermann, R. Radtke
Spectroscopy of Highly Charged Tungsten Relevant to Fusion Plasmas
ICAMDATA-2008: 6th International Conference on Molecular Data and Their Applications; AIP Conference Proceedings, Vol. 1125, New York, NY ¡br¿AIP Press, (2009)

$\mathbf{W^{13+--67+}}$	Energy Levels, Wavelengths	Exp

486. J. Y. Zhang, J. Mitroy, H. R. Sadeghpour, M. W. J. Bromley
Long-Range Interactions of Copper and Silver Atoms with Hydrogen, Helium, and Rare-Gas Atoms
Phys. Rev. A 78, 062710 (2008)

Cu	Energy Levels, Wavelengths	E/T
Ag	Energy Levels, Wavelengths	E/T

487. J. M. Bridges, W. L. Wiese
Experimental Transition Probabilities for Infrared Lines of Cl I
Phys. Rev. A 78, 062508 (2008)

Cl	Energy Levels, Wavelengths	Exp

488. P. D. Sarkisov, Yu. A. Baikov, V. P. Meshalkin
The Self-Consistent Field Method in the Hartree Approximation for Some Two-Electron Configurations
Doklady Physics 53-11, 574-578 (2008)

He Z= 2-18	Energy Levels, Wavelengths	Th

489. T. Pütterich, R. Neu, R. Dux, A. D. Whiteford, M. G. O'Mullane, ASDEX Upgrade Team
Modelling of measured tungsten spectra from ASDEX Upgrade and predictions for ITER
Plasma Phys. and Controlled Fusion 50, 085016 (2008)

$\mathbf{W^{14+--35+}}$	Energy Levels, Wavelengths	E/T
$\mathbf{W^{27+--35+}}$	Energy Levels, Wavelengths	E/T
$\mathbf{W^{39+}}$	Energy Levels, Wavelengths	E/T
$\mathbf{W^{39+--48+}}$	Energy Levels, Wavelengths	E/T
$\mathbf{W^{40+--48+}}$	Energy Levels, Wavelengths	E/T
$\mathbf{W^{57+--67+}}$	Energy Levels, Wavelengths	E/T

490. R. Radtke, C. Biedermann, P. Mandelbaum, J. L. Schwob
X ray and EUV Spectroscopic Measurements of Highly Charged Tungsten Ions Relevant to Fusion Plasmas
J. Phys.: Conf. Ser. 58, 113-116 (2007)

$\mathbf{W}^{35+--37+}$	Energy Levels, Wavelengths	Exp
$\mathbf{W}^{45+--50+}$	Energy Levels, Wavelengths	Exp

491. J. E. Rice, J. L. Terry, K. B. Fournier, E. S. Marmar
Core Atomic Physics Studies in Alcator C-Mod
Fusion Sci. Technol. 51-3, 451-459 (2007)

$\mathbf{Ar}^{15+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Ar}^{16+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Kr}^{25+--27+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Zr}^{30+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Nb}^{30+--32+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Mo}^{31+--33+}$	Energy Levels, Wavelengths	Exp

492. S. B. Whitfield, R. Wehlitz, M. O. Krause, C. D. Caldwell
Analysis of the Atomic Fe 3d and 4s Partial Cross Sections in the Region of the 3p → 3d Giant Resonance
Surface Rev. Lett. 9, 1229-1233 (2002)

Fe	Energy Levels, Wavelengths	Exp

493. T. Ibuki, K. Okada, K. Kamimori, J. Sasaki, H. Yoshida, A. Hiraya, I. H. Suzuki, N. Saito, S. Nagaoka, Y. Shimizu, H. Ohashi, Y. Tamenori
Resonant Auger Spectra of Kr Near the L_3 Threshold
Surface Rev. Lett. 9, 85-88 (2002)

Kr	Energy Levels, Wavelengths	Exp

494. N.-W. Zheng, Y.-J. Sun
The Regularities of the Rydberg Energy Levels of Many-Valence Electron Atom Al
Sci. China, Ser. B 43, 113-120 (2000)

Al	Energy Levels, Wavelengths	E/T

495. X.-D. Li, M.-L. Tan, Y.-G. Yi, Z.-H. Zhang, Z.-H. Zhu
Fully Relativistic Calculations of the Energies, Oscillator Strengths and Einstein Coefficients of the Forbidden Transitions for Ne-like Sequences
Chin. Phys. 9-2, 100-107 (2000)

$\mathbf{Ge}^{22+}$	Energy Levels, Wavelengths	Th
$\mathbf{Se}^{24+}$	Energy Levels, Wavelengths	Th
$\mathbf{Zr}^{30+}$	Energy Levels, Wavelengths	Th
$\mathbf{Rh}^{35+}$	Energy Levels, Wavelengths	Th
$\mathbf{Ag}^{37+}$	Energy Levels, Wavelengths	Th
$\mathbf{Sb}^{41+}$	Energy Levels, Wavelengths	Th
$\mathbf{Xe}^{44+}$	Energy Levels, Wavelengths	Th
$\mathbf{La}^{47+}$	Energy Levels, Wavelengths	Th
$\mathbf{Nd}^{50+}$	Energy Levels, Wavelengths	Th
$\mathbf{Eu}^{53+}$	Energy Levels, Wavelengths	Th

496. X.-D. Li, M.-L. Tan, Y.-G. Yi, Z.-H. Zhu
Calculation of the Transition Energies of the Ne-like Ions with the Correction of Core Polarization
Chin. Phys. 9-1, 13-18 (2000)

Ne Z= 32-63	Energy Levels, Wavelengths	Th

497. G. V. Brown, P. Beiersdorfer, D. A. Liedahl, K. Widmann, S. M. Kahn
Laboratory Measurements and Identification of the Fe XVIII-XXIV L-Shell X-ray Line Emission
Lawrence Livermore Lab., Univ. California, Livermore, CA ¡br¿Technical Report, (2000)

$Fe^{17+-23+}$	Energy Levels, Wavelengths	Exp

498. M. Stenke, K. Aichele, D. Hathiramani, E. Salzborn
Electron-Impact Ionization of Fe^{5+} Ions
Int. J. Mass Spectrom. 192, 27-37 (1999)

Fe^{5+}	Energy Levels, Wavelengths	Exp

499. M. O. Bulanin, I. M. Kislyakov
Dynamic Polarizabilities of Rare-Gas Atoms: Helium, Neon, and Argon
Opt. Spectrosc. 86-5, 632-639 (1999)

He	Energy Levels, Wavelengths	Th
Ne	Energy Levels, Wavelengths	Th
Ar	Energy Levels, Wavelengths	Th

500. G. P. Anisimova, E. L. Kapel'kina, R. I. Semenov
Numerical Calculation of the Fine-Structure Parameters for a Number of Two-Electron Configurations with Equivalent p Electrons
Opt. Spectrosc. 86-4, 474-480 (1999)

C Z= 6-11	Energy Levels, Wavelengths	Th
Si Z= 14-17	Energy Levels, Wavelengths	Th
P^{9+}	Energy Levels, Wavelengths	Th
Ar^{4+}	Energy Levels, Wavelengths	Th
Ge	Energy Levels, Wavelengths	Th
Se^{2+}	Energy Levels, Wavelengths	Th
Br^{3+}	Energy Levels, Wavelengths	Th
Te^{2+}	Energy Levels, Wavelengths	Th
Pb	Energy Levels, Wavelengths	Th
Bi^{+}	Energy Levels, Wavelengths	Th

501. M. B. Shabaeva
Corrections for the Electron-Electron Interaction to the Hyperfine Structure of Lithium-like Multiply Charged Ions
Opt. Spectrosc. 86-3, 317-319 (1999)

Li Z= 10-90	Energy Levels, Wavelengths	Th

502. R. Kling, M. Kock
W I Branching Ratios and Oscillator Strengths
J. Quant. Spectrosc. Radiat. Transfer 62, 129-140 (1999)

W	Energy Levels, Wavelengths	Exp

503. Z.-D. Mu, X.-L. Zhang
The Energy Levels and Oscillator Strengths for Transitions $3d^{10}4s$–$3d^{9}4s4p$ in Ions from Cu I–As V
Spectrosc. Spectr. Analysis 19-4, 518-520 (1999)

Cu Z= 29-33	Energy Levels, Wavelengths	Th

504. Y. Chen, L.-S. Pei, J. Jin, Q. Ran, C.-X. Chen, S.-Q. Yu, X.-X. Ma
Resonance-Enhanced Multiphoton Ionization Spectra of the Halogen Atoms
Acta Phys. Sin. (Overseas Edition) 8, 490-495 (1999)

Cl	Energy Levels, Wavelengths	Exp
Br	Energy Levels, Wavelengths	Exp

505. R. O. Esquivel, A. Vivier-Bunge, V. H. Smith Jr.
Accurate Determination of the Fermi-Contact Interaction in Atomic Lithium
J. Mol. Struct. (Theochem.) 433, 43-50 (1998)

Li	Energy Levels, Wavelengths	Th

506. G. Yu. Kashenock, V. K. Ivanov
The $2s^12p^4$ Autodetachment Resonance in the C^- Negative Ion
Phys. Lett. A 245, 110-116 (1998)

C^-	Energy Levels, Wavelengths	Th

507. N. Yamanaka
Calculations of Specific Mass Shifts in Be II ($1s^22s\ ^2S$, $1s^22p\ ^2P$)
Phys. Lett. A 243, 132-136 (1998)

Li	Energy Levels, Wavelengths	Th
Be^+	Energy Levels, Wavelengths	Th

508. M. O. Bulanin, I. M. Kislyakov
Dynamic Polarizabilities of Rare-Gas Atoms: Krypton and Xenon
Opt. Spectrosc. 85-6, 819-825 (1998)

Kr	Energy Levels, Wavelengths	Th
Xe	Energy Levels, Wavelengths	Th

509. A. N. Artem'ev, V. M. Shabaev, V. A. Erokhin
The Contribution of Diagrams of Screened Vacuum Polarization to the Ground-State Energy of a Two-Electron Multiply Charged Ion
Opt. Spectrosc. 84-1, 1-3 (1998)

He Z= 20-100	Energy Levels, Wavelengths	Th

510. B. Roussière, F. Le Blanc, J. Pinard, L. Cabaret, J. Crawford, H. T. Duong, J. Genevey, G. Huber, F. Ibrahim, M. Krieg, J. K. P. Lee, J. Obert, J. Oms, J. C. Putaux, C. Richard-Serre, J. Sauvage, V. Sebastian, ISOLDE Collaboration
Deformation Change Between ^{184m}Au and ^{184g}Au
Acta Phys. Hung. New Ser. 7-1, 97-100 (1998)

Au	Energy Levels, Wavelengths	Exp

511. F. W. King
Progress on High Precision Calculations for the Ground State of Atomic Lithium
J. Mol. Struct. (Theochem.) 400, 7-56 (1997)

Li^-	Energy Levels, Wavelengths	E/T
Li	Energy Levels, Wavelengths	E/T
Li^+	Energy Levels, Wavelengths	E/T

512. P. H. Rieger
Atomic Hyperfine-Coupling Parameters for the Transition Metals
J. Magn. Resonance 124, 140-146 (1997)

Ti-Cu	Energy Levels, Wavelengths	Th
Ti	Energy Levels, Wavelengths	Th
V	Energy Levels, Wavelengths	Th
Cr	Energy Levels, Wavelengths	Th
Mn	Energy Levels, Wavelengths	Th
Fe	Energy Levels, Wavelengths	Th
Co	Energy Levels, Wavelengths	Th
Ni	Energy Levels, Wavelengths	Th
Cu	Energy Levels, Wavelengths	Th
Zr-Ag	Energy Levels, Wavelengths	Th
Zr	Energy Levels, Wavelengths	Th
Nb	Energy Levels, Wavelengths	Th
Mo	Energy Levels, Wavelengths	Th
Tc	Energy Levels, Wavelengths	Th
Ru	Energy Levels, Wavelengths	Th
Rh	Energy Levels, Wavelengths	Th
Pd	Energy Levels, Wavelengths	Th
Ag	Energy Levels, Wavelengths	Th
Hf-Au	Energy Levels, Wavelengths	Th
Hf	Energy Levels, Wavelengths	Th
Ta	Energy Levels, Wavelengths	Th
W	Energy Levels, Wavelengths	Th
Re	Energy Levels, Wavelengths	Th
Os	Energy Levels, Wavelengths	Th
Ir	Energy Levels, Wavelengths	Th
Pt	Energy Levels, Wavelengths	Th
Au	Energy Levels, Wavelengths	Th

513. A. Wada, C. Hirose
Term Values of the Autoionization Levels of Kr ns′ and nd′ Configurations
J. Mol. Struct. 379, 205-209 (1996)

Kr	Energy Levels, Wavelengths	Exp

514. R. Singh, B. M. Deb
Density Functional Calculation of Complex Atomic Spectra
J. Mol. Struct. (Theochem.) 369, 215 (1996)

C	Energy Levels, Wavelengths	Th
Si	Energy Levels, Wavelengths	Th

515. G. Pestka, W. Woźnicki
Hylleraas-Type Calculations for Lithium
Chem. Phys. Lett. 255, 281-286 (1996)

Li	Energy Levels, Wavelengths	Th

516. H. Daido, S. Ninomiya, T. Imani, R. Kodama, K. Murai, F. Koike, Y. Kato
Wavelength Measurement on the Ni-like Soft X-ray Lasing and Its Comparison to the Atomic Physics Calculation
Inst. Phys. Conf. Ser. 151, 433-435 (1996)

$\mathbf{Nd}^{32+}$	Energy Levels, Wavelengths	E/T
$\mathbf{Sm}^{34+}$	Energy Levels, Wavelengths	E/T
$\mathbf{Gd}^{36+}$	Energy Levels, Wavelengths	E/T
$\mathbf{Dy}^{38+}$	Energy Levels, Wavelengths	E/T
$\mathbf{Ho}^{39+}$	Energy Levels, Wavelengths	E/T

Yb^{42+}	Energy Levels, Wavelengths	E/T
Hf^{44+}	Energy Levels, Wavelengths	E/T
Ta^{45+}	Energy Levels, Wavelengths	E/T

517. V. A. Erokhin, V. M. Shabaev
Contribution of the Diagrams of Screened Self-Energy to the Lamb Shift of the Ground State of a Two-Electron Multiply-Charged Ion
JETP 83-1, 39-49 (1996)

He Z= 20-109	Energy Levels, Wavelengths	Th

518. V. M. Villalba
On the Relativistic Hydrogen Atom
Rev. Mex. Fis. 42, 1-11 (1996)

H Z= 1-109	Energy Levels, Wavelengths	Th

519. A. Ya. Faenov
Analysis of the Errors in Measuring the Wavelengths of X-ray Spectral Lines of Multiply Charged Ions in a Dense High-Temperature Plasma
Meas. Tech. 39, 1061-1067 (1996)

Al^{11+}	Energy Levels, Wavelengths	Exp
$Al^{11+--12+}$	Energy Levels, Wavelengths	Exp

520. C.-J. Dai
Study of Mg 3sns and Sr 5sns Rydberg States
Acta Phys. Sin. (Overseas Edition) 5-8, 579-589 (1996)

Mg	Energy Levels, Wavelengths	E/T
Sr	Energy Levels, Wavelengths	E/T

521. W. C. Martin, W. L. Wiese
Atomic Spectroscopy
Atomic, Molecular, and Optical Physics Handbook, Woodbury, NY ¡br¿AIP Press, (1996)

H-Po	Energy Levels, Wavelengths	E/T
Rn-Rf	Energy Levels, Wavelengths	E/T

522. L. Windholz
Laser-Spectroscopic Investigations of the Lithium Resonance Lines
Appl. Phys. (Germany) B 60, 573-582 (1995)

Li	Energy Levels, Wavelengths	Exp

523. B.-C. Gou, X.-Y. Chen, Z. Chen
Energies and Radiative and Auger Rates of Doubly-Excited States of Multiply-Charged Be-like Ions
Sci. China, Ser. A 38-1, 52-58 (1995)

S^{12+}	Energy Levels, Wavelengths	Th
Ar^{14+}	Energy Levels, Wavelengths	Th

524. B. A. Nadykto
On Isotope Mass Shifts of Energy-Levels of Helium-like and Lithium-like Ions
Dokl. Akad. Nauk 334-1, 41-43 (1994)

He Z= 2-100 Energy Levels, Wavelengths Th
Li Z= 3-100 Energy Levels, Wavelengths Th

525. R. N. Li, A. I. Mil'shteĭn
Effect of Finite Nuclear Dimensions on Vacuum Polarization in Heavy-Atoms
JETP 79-1, 23 (1994)

H Z= 1-100 Energy Levels, Wavelengths Th

526. A. K. Das, T. K. Ghosh, P. K. Mukherjee
Doubly-Excited $^3S^e$, $^3D^e$ and $^3G^e$ States of Two-Electron Atomic Systems
Theor. Chim. Acta 89-2-3, 147-155 (1994)

He Z= 2-5 Energy Levels, Wavelengths Th

527. C. Froese Fischer, P. Jönsson
MCHF Calculations for Atomic Properties
Comput. Phys. Commun. 84, 37-58 (1994)

B Energy Levels, Wavelengths Th
C Energy Levels, Wavelengths Th

528. F. Colmenero, C. Valdemoro
Self-Consistent Approximate Solution of the Second-Order Contracted Schrödinger Equation
Int. J. Quantum Chem. 51, 369-388 (1994)

Be Z= 4-9 Energy Levels, Wavelengths Th

529. A. Lüchow, H. Kleindienst
Accurate Upper and Lower Bounds to the ^{2}S States of the Lithium Atom
Int. J. Quantum Chem. 51, 211-224 (1994)

Li Energy Levels, Wavelengths Th

530. R. C. Morrison
Extended Koopmans' Theorem Ionization Potentials for Beryllium Atom Shake-up Transitions
Int. J. Quantum Chem. 49, 649-656 (1994)

Be Energy Levels, Wavelengths Th

531. T. Shirai, T. Nakagaki, K. Okazaki, J. Sugar, W. L. Wiese
Spectral Data and Grotrian Diagrams for Highly Ionized Manganese, Mn VII through Mn XXV
J. Phys. Chem. Ref. Data 23-2, 179-294 (1994)

$Mn^{6+--24+}$ Energy Levels, Wavelengths E/T

532. S. L. Sorensen, T. Åberg, J. Tulkki, E. Rachlew-Källne, G. Sundström, M. Kirm
Argon 3s Autoionization
J. Phys. IV (France) 4, C9-401-C9-404 (1994)

Ar Energy Levels, Wavelengths Exp

533. S. Johansson, G. Nave, M. Geller, A. J. Sauval, N. Grevesse
Analysis of Very High-Excitation Fe I Lines (4f-5g) in the Solar Infrared Spectrum
Infrared Solar Physics, Proceedings of the 154th Symposium of the IAU, Tucson, AZ, March 2-6, 1992, Dordrecht, Holland ¡br¿Kluwer Academic Publishers, (1994)

Fe	Energy Levels, Wavelengths	Exp

534. E. Biémont
Atomic Spectroscopy in the Infrared
Infrared Solar Physics, Proceedings of the 154th Symposium of the IAU, Tucson, AZ, March 2-6, 1992, Dordrecht, Holland ¡br¿Kluwer Academic Publishers, (1994)

C-N^{0+--+}	Energy Levels, Wavelengths	Exp
C^{0+--+}	Energy Levels, Wavelengths	Exp
N	Energy Levels, Wavelengths	Exp
N^{0+--+}	Energy Levels, Wavelengths	Exp
O	Energy Levels, Wavelengths	Exp
Mg	Energy Levels, Wavelengths	Exp
Si	Energy Levels, Wavelengths	Exp
V	Energy Levels, Wavelengths	Exp

535. W. G. Schoenfeld, E. S. Chang, M. Geller
High-l Rydberg Lines of Fe I in the ATMOS Spectra – 4g-5g, 5g-6h
Infrared Solar Physics, Proceedings of the 154th Symposium of the IAU, Tucson, AZ, March 2-6, 1992, Dordrecht, Holland ¡br¿Kluwer Academic Publishers, (1994)

Fe	Energy Levels, Wavelengths	Exp

536. A. El Karoini, R. Ghailane, S. Jorio, N. Komiha, O. K. Kabbaj, M. Chraibi
Etude ab initio (SCF + IC) des états spectroscopiques et de l'affinité electronique des atomes de la deuxieme période B, C, N et F. Détermination de bases d'orbitales atomiques
J. Mol. Struct. (Theochem.) 279, 1-5 (1993)

B^{-}	Energy Levels, Wavelengths	Th
C^{-}	Energy Levels, Wavelengths	Th
N^{-}	Energy Levels, Wavelengths	Th
O^{-}	Energy Levels, Wavelengths	Th
F^{-}	Energy Levels, Wavelengths	Th

537. S. Basu, P. L. Hagelstein, J. G. Goodberlet, M. H. Muendel, S. Kaushik
Amplification in Ni-like Nb at 204.2 Å Pumped by a Table-Top Laser
Appl. Phys. (Germany) B 57, 303-307 (1993)

Nb^{13+}	Energy Levels, Wavelengths	Exp

538. K. Gäbel, Ch. Bergmann, E. Fill, E. Förster, I. Uschmann
Verification of X-ray Line Coincidences by High-Resolution Spectroscopy
Appl. Phys. (Germany) B 56, 3-7 (1993)

Al^{11+}	Energy Levels, Wavelengths	Exp
Si$^{12+--13+}$	Energy Levels, Wavelengths	Exp
P^{14+}	Energy Levels, Wavelengths	Exp
S^{14+}	Energy Levels, Wavelengths	Exp
Cl^{16+}	Energy Levels, Wavelengths	Exp
K$^{17+--18+}$	Energy Levels, Wavelengths	Exp

539. M. A. Ali
Fine-Structure Splittings of Potassium-like and Rubidium-like Ions by the Multiconfiguration Dirac-Fock Method
J. Mol. Struct. (Theochem.) 261, 175-185 (1992)

K Z= 22-54	Energy Levels, Wavelengths	E/T

540. H. El-Kashef, N. Ludwig
High Precision Laser-RF Spectroscopic Measurements of the Hyperfine Structure of Vanadium-51
Physica B 179, 103-110 (1992)

V	Energy Levels, Wavelengths	Exp

541. V. Tsemekhman, K. Tsemekhman, M. Amusia
MBPT Approach to the Calculation of Quantum Defects of nd′ (J = 1, 2) Resonances in the Rare Gas Atoms
Inst. Phys. Conf. Ser. 128, 79-82 (1992)

Ne	Energy Levels, Wavelengths	Th
Ar	Energy Levels, Wavelengths	Th
Xe	Energy Levels, Wavelengths	Th

542. R. H. Page, S. C. Dropinski, E. F. Worden Jr., J. A. D. Stockdale
Resonance Ionization Spectroscopy of Zirconium Atoms
Inst. Phys. Conf. Ser. 128, 63-66 (1992)

Zr	Energy Levels, Wavelengths	Exp

543. H. Daido, Y. Kato, H. Azuma, K. Murai, H. Shiraga, K. Yamakawa, T. Togawa, T. Kanabe, M. Takagi, H. Takabe, S. Nakai, P. Holden, G. J. Pert
Simultaneous Amplification of a Recombination Pumped Hydrogen-like Fluorine and Sodium Balmer-Alpha Laser Produced by a 20 ps, 0.53 μm Laser Light
Inst. Phys. Conf. Ser. 125, 111-114 (1992)

$\mathbf{F}^{6+--8+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Na}^{8+--10+}$	Energy Levels, Wavelengths	Exp

544. A. K. Das, D. Ray, P. K. Mukherjee
Static Dipole Polarizabilities of Open-Shell Negative Ions
Theor. Chim. Acta 82, 223-227 (1992)

$\mathbf{Be}^{-}$	Energy Levels, Wavelengths	Th
$\mathbf{B}^{-}$	Energy Levels, Wavelengths	Th
$\mathbf{C}^{-}$	Energy Levels, Wavelengths	Th
$\mathbf{N}^{-}$	Energy Levels, Wavelengths	Th
$\mathbf{O}^{-}$	Energy Levels, Wavelengths	Th
$\mathbf{F}^{-}$	Energy Levels, Wavelengths	Th
$\mathbf{Al}^{-}$	Energy Levels, Wavelengths	Th
$\mathbf{Si}^{-}$	Energy Levels, Wavelengths	Th
$\mathbf{P}^{-}$	Energy Levels, Wavelengths	Th
$\mathbf{S}^{-}$	Energy Levels, Wavelengths	Th
$\mathbf{Cl}^{-}$	Energy Levels, Wavelengths	Th

545. H. Kleindienst, U. De Groot
An Accurate Lower-Bound Calculation of the Lowest Triplet States of He and Its Isoelectronic Series
Int. J. Quantum Chem. 44, 59-65 (1992)

He Z= 2-10	Energy Levels, Wavelengths	Th
He	Energy Levels, Wavelengths	Th

546. F. Yang, G.-Y. Pan, D.-W. Li, W. Zhang, Z.-W. Liu, Q. Xu, H.-P. Liu, M.-C. Zhao
Single Electron-Capture into Excited-States in Collision Between O^{5+} and He
Sci. China, Ser. A 35-10, 1210-1213 (1992)

O^{4+}	Energy Levels, Wavelengths	Exp

547. Z. Fang, O. Redi, H. H. Stroke
Isotope Shift Constant and Nuclear Charge Model
J. Phys. II (France) 2, 877-893 (1992)

H Z= 10-95	Energy Levels, Wavelengths	Th

548. J. Steingruber, E. E. Fill
Soft-X-ray Gain in Na-like Copper and Nickel Ions
Inst. Phys. Conf. Ser. 116, 123-126 (1991)

Na Z= 28-29	Energy Levels, Wavelengths	Exp
Ge^{21+}	Energy Levels, Wavelengths	Exp

549. I. P. Zapesochnyi, A. I. Imre, A. I. Dashchenko, V. I. Frontov
Structure in Cross-Sections for Excitation of Alkali-Earth Ions by Monoenergetic Electrons
Zh. Eksp. Teor. Fiz. (Russia) 100-1, 113-124 (1991)

Mg	Energy Levels, Wavelengths	Exp
Ca	Energy Levels, Wavelengths	Exp
Sr	Energy Levels, Wavelengths	Exp
Ba	Energy Levels, Wavelengths	Exp

550. I. P. Zapesochnyi, A. I. Imre, Y. N. Semenyuok
Inelastic Collisions Between Electrons and Noble Gas Ions
Zh. Eksp. Teor. Fiz. (Russia) 99-3, 721-734 (1991)

He	Energy Levels, Wavelengths	Exp
Ne	Energy Levels, Wavelengths	Exp
Ar	Energy Levels, Wavelengths	Exp
Kr	Energy Levels, Wavelengths	Exp

551. W. Z. Zhao, X. Y. Xu, W. Y. Ma, Y. Cheng, Q. Hui, K. L. Wen, D. Y. Chen
Experimental Study of Autoionizing States of Au I
Appl. Phys. (Germany) B 52, 299-304 (1991)

Au	Energy Levels, Wavelengths	Exp

552. H. Jäger, L. Windholz
Untersuchungen des Starkeffektes bei Hohen Feldstärken
Contrib. Plasma Phys. 31, 143-165 (1991)

Ne	Energy Levels, Wavelengths	Th

553. Q.-R. Zhu, S.-F. Pan, Y.-F. Yang
Li-like Si Soft-X-ray Laser: Level Structure, Wavelengths, and Rates of the Radiative Transitions
Chin. Phys. (AIP) 11-4, 894-896 (1991)

Si^{11+}	Energy Levels, Wavelengths	Th

554. V. L. Sukhorukov, A. N. Hopersky, I. D. Petrov
Calculation of Kr Photoabsorption Spectrum Fine Structure within the KN_{23} Ionization Threshold Region
J. Phys. II (France) 1, 501-509 (1991)

Kr	Energy Levels, Wavelengths	Th

555. H. M. Lauranto, I. H. Auterinen, T. T. Kajava, K. M. Nyholm, R. R. E. Salomaa
Determination of Hyperfine Structures and Rydberg Convergence Limits of Selected Optical Transitions in ^{93}Nb Using Resonance Ionization Spectroscopy
Appl. Phys. (Germany) B 50, 323-329 (1990)

Nb	Energy Levels, Wavelengths	Exp

556. H. Sekino, R. J. Bartlett
Relativistic Coupled Cluster Calculations on Neutral and Highly Ionized Atoms
Int. J. Quantum Chem. 38, 241-244 (1990)

Be	Energy Levels, Wavelengths	Th
$\mathbf{Ne}^{6+}$	Energy Levels, Wavelengths	Th
$\mathbf{Ar}^{14+}$	Energy Levels, Wavelengths	Th
$\mathbf{Sn}^{46+}$	Energy Levels, Wavelengths	Th

557. A. Sharma, G. L. Bhale, M. A. N. Razvi
Three-Photon Resonant Ionization in Atomic Potassium via, S, P, D and F Series Rydberg States
Pramana 35, 95-104 (1990)

Li	Energy Levels, Wavelengths	Exp
Na	Energy Levels, Wavelengths	Exp
K	Energy Levels, Wavelengths	Exp
Rb	Energy Levels, Wavelengths	Exp
Cs	Energy Levels, Wavelengths	Exp

558. X. P. Feng, Z.-Z. Xu, S. S. Chen, P.-z. Fan
Laser Plasma X-ray Spectra of Al, Si, O, Cu, Se
Chin. Phys. (AIP) 10-3, 750-754 (1990)

$\mathbf{O}^{6+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Na}^{9+--10+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Al}^{10+--12+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Si}^{12+--13+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Cu}^{19+}$	Energy Levels, Wavelengths	Exp
$\mathbf{Se}^{24+}$	Energy Levels, Wavelengths	Exp

559. L. Yang, L. Liu, J.-M. Li
Fine Structure of Excited Atomic Ions Along Potassium Isoelectronic Sequence
Chin. Phys. Lett. 7-3, 121-124 (1990)

K Z= 21-96	Energy Levels, Wavelengths	Th

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Density Functional Theory Calculations of One Electron Rydberg States in Li Atom
Theor. Chim. Acta 76, 373-375 (1989)

Li	Energy Levels, Wavelengths	Th

561. M. B. Schneider, M. A. Levine, C. L. Bennett, J. R. Henderson, D. A. Knapp, R. E. Marrs
Evaporative Cooling of Highly Ions in EBIT: An Experimental Realization
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Au^{69+}	Energy Levels, Wavelengths	Exp

562. G. D. Alkhazov, A. E. Barzakh, N. B. Buyanov, V. P. Denisov, V. S. Ivanov, V. S. Letokhov, V. I. Mishin, S. K. Sekatskiĭ, V. N. Fedoseev, I. Ya. Chubukov
Differences in the Isotopic Changes in the Charge Radii of Nuclei with 50≤(N,Z)≤82
JETP Letters 46-4, 170-173 (1987)

Xe	Energy Levels, Wavelengths	Exp
Cs	Energy Levels, Wavelengths	Exp
Ba	Energy Levels, Wavelengths	Exp
Nd	Energy Levels, Wavelengths	Exp
Sm	Energy Levels, Wavelengths	Exp
Eu	Energy Levels, Wavelengths	Exp

563. M. G. Kozlov
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, Moscow ¡br¿Nauka, (1981)

Li	Energy Levels, Wavelengths	Exp
Be	Energy Levels, Wavelengths	Exp
Na	Energy Levels, Wavelengths	Exp
Mg	Energy Levels, Wavelengths	Exp
Al	Energy Levels, Wavelengths	Exp
K	Energy Levels, Wavelengths	Exp
Ca	Energy Levels, Wavelengths	Exp
Sc	Energy Levels, Wavelengths	Exp
Cr-Zn	Energy Levels, Wavelengths	Exp
Ga	Energy Levels, Wavelengths	Exp
Ge	Energy Levels, Wavelengths	Exp
Rb	Energy Levels, Wavelengths	Exp
Sr	Energy Levels, Wavelengths	Exp
Y	Energy Levels, Wavelengths	Exp
Ag	Energy Levels, Wavelengths	Exp
Cd	Energy Levels, Wavelengths	Exp
In	Energy Levels, Wavelengths	Exp
Sn	Energy Levels, Wavelengths	Exp
Cs	Energy Levels, Wavelengths	Exp
Ba	Energy Levels, Wavelengths	Exp
Eu	Energy Levels, Wavelengths	Exp
Yb	Energy Levels, Wavelengths	Exp
Au	Energy Levels, Wavelengths	Exp
Hg	Energy Levels, Wavelengths	Exp
Tl	Energy Levels, Wavelengths	Exp
Pb	Energy Levels, Wavelengths	Exp
Bi	Energy Levels, Wavelengths	Exp

564. O. B. Shpenik, I. P. Zapesochnyĭ, E. É. Kontrosh, É. I. Nepiĭpov, N. I. Romanyuk, V. V. Sovter
Effects of Negative-Ion Formation and Post-Collision Interaction in Collisions Between Magnesium Atoms and Electrons
Sov. Phys.-JETP 49, 426 (1979)

Mg^-	Energy Levels, Wavelengths	Exp
Mg	Energy Levels, Wavelengths	Exp

565. H. Hotop, W. C. Lineberger
Binding Energies in Atomic Negative Ions
J. Phys. Chem. Ref. Data 4, 539-576 (1975)

H^-	Energy Levels, Wavelengths	E/T
He^-	Energy Levels, Wavelengths	E/T
Li^-	Energy Levels, Wavelengths	E/T
Be^-	Energy Levels, Wavelengths	E/T
B-F^-	Energy Levels, Wavelengths	E/T
B^-	Energy Levels, Wavelengths	E/T
C^-	Energy Levels, Wavelengths	E/T
O^-	Energy Levels, Wavelengths	E/T
Na-Cl^-	Energy Levels, Wavelengths	E/T
Al^-	Energy Levels, Wavelengths	E/T
Si^-	Energy Levels, Wavelengths	E/T
P^-	Energy Levels, Wavelengths	E/T
S^-	Energy Levels, Wavelengths	E/T
K-Cu^-	Energy Levels, Wavelengths	E/T
K-Br^-	Energy Levels, Wavelengths	E/T
Ni^-	Energy Levels, Wavelengths	E/T
Ga^-	Energy Levels, Wavelengths	E/T
Ge^-	Energy Levels, Wavelengths	E/T
As^-	Energy Levels, Wavelengths	E/T
Se^-	Energy Levels, Wavelengths	E/T
Rb^-	Energy Levels, Wavelengths	E/T
Y-Pd^-	Energy Levels, Wavelengths	E/T
Ag-I^-	Energy Levels, Wavelengths	E/T
In^-	Energy Levels, Wavelengths	E/T
Sn^-	Energy Levels, Wavelengths	E/T
Sb^-	Energy Levels, Wavelengths	E/T
Te^-	Energy Levels, Wavelengths	E/T
Cs^-	Energy Levels, Wavelengths	E/T
La^-	Energy Levels, Wavelengths	E/T
Hf-Au^-	Energy Levels, Wavelengths	E/T
Pt^-	Energy Levels, Wavelengths	E/T
Tl-At^-	Energy Levels, Wavelengths	E/T
Tl^-	Energy Levels, Wavelengths	E/T

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An Atlas of Infrared Spectra of the Solar Photosphere and of Sunspot Umbrae, in the Spectral Intervals 4040 cm^{-1}–5095 cm^{-1}, 5550 cm^{-1}–6700 cm^{-1}, 7400 cm^{-1}–8790 cm^{-1}
Kitt Peak National Observatory, Tucson, AZ, USA ¡br¿Technical Report, (1974)

H	Energy Levels, Wavelengths	Exp
C	Energy Levels, Wavelengths	Exp
O	Energy Levels, Wavelengths	Exp
Na	Energy Levels, Wavelengths	Exp
Mg	Energy Levels, Wavelengths	Exp
Al	Energy Levels, Wavelengths	Exp
Si	Energy Levels, Wavelengths	Exp
S	Energy Levels, Wavelengths	Exp
K	Energy Levels, Wavelengths	Exp
Ca^{0+--+}	Energy Levels, Wavelengths	Exp
Sc	Energy Levels, Wavelengths	Exp
Ti	Energy Levels, Wavelengths	Exp
V	Energy Levels, Wavelengths	Exp
Cr	Energy Levels, Wavelengths	Exp
Mn	Energy Levels, Wavelengths	Exp
Fe	Energy Levels, Wavelengths	Exp
Ni	Energy Levels, Wavelengths	Exp

Zn	Energy Levels, Wavelengths	Exp
Zr	Energy Levels, Wavelengths	Exp
Cs	Energy Levels, Wavelengths	Exp

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Hydrogen-like Relativistic Corrections for Electric and Magnetic Hyperfine Integrals
Int. J. Quantum Chem. 7, 785-806 (1973)

H Z= 1-100	Energy Levels, Wavelengths	Th

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Spectrum of Mo VI in the 6800–2200 Å Region
Opt. Spectrosc. 27, 8-11 (1969)

$\mathbf{Mo^{5+}}$	Energy Levels, Wavelengths	Exp

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The Broadening of Spectral Lines in a Strongly Ionized Plasma. III. Wavelengths of the Lines of Multiply Charged Ions
Opt. Spectrosc. 16, 6-8 (1964)

$\mathbf{Al^{2+}}$	Energy Levels, Wavelengths	Exp
$\mathbf{Si^{2+}-^{3+}}$	Energy Levels, Wavelengths	Exp
$\mathbf{Sn^{3+}}$	Energy Levels, Wavelengths	Exp

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Thesis, Universit'e de Paris, France , (1964)

Nd	Energy Levels, Wavelengths	Exp
W	Energy Levels, Wavelengths	Exp
Os	Energy Levels, Wavelengths	Exp

571. T. A. Littlefield, W. R. C. Rowley
Interferometric Wavelength Measurements in the Spectrum of Argon Between 1 and 2 μm
Proc. R. Soc. London Ser. A 276, 502-512 (1963)

Ar	Energy Levels, Wavelengths	Exp

572. R. H. Lambert, F. M. Pipkin
Pressure Shifts of the Hyperfine Structure of Atomic Nitrogen
Phys. Rev. 129, 1233-1239 (1963)

N	Energy Levels, Wavelengths	Exp

573. L. Minnhagen
The spectrum of singly ionized argon, Ar II
Ark. Fys. (Stockholm) 25, 203 (1963)

$\mathbf{Ar^{+}}$	Energy Levels, Wavelengths	Exp

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Hyperfine Structure of Atomic Nitrogen
Phys. Rev. 126, 2109-2115 (1962)

N	Energy Levels, Wavelengths	Exp

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Quadrupole Coupling in the Hyperfine Structure of the Spectra of Ta I and Os I
J. Phys. Soc. Japan 17, 891-896 (1962)

Ta	Energy Levels, Wavelengths	Exp
Os	Energy Levels, Wavelengths	Exp

576. L. W. Anderson, F. M. Pipkin, J. C. Baird Jr.
N^{14}-N^{15} Hyperfine Anomaly
Phys. Rev. 116, 87-98 (1959)

N	Energy Levels, Wavelengths	Exp

577. P. F. A. Klinkenberg, W. F. Meggers, R. Velasco, M. A. Catalán
Term Analysis of the First Spectrum of Rhenium (Re I)
J. Res. Nat. Bur. Stand. 59, 319-348 (1957)

Re	Energy Levels, Wavelengths	Exp

578. T. A. Littlefield, D. T. Turnbull
Argon Vacuum Wave-Length Measurements
Proc. R. Soc. London Ser. A 218, 577-586 (1953)

Ar	Energy Levels, Wavelengths	Exp

579. K. Burns, K. B. Adams
Interference Measurements in the Spectrum of Argon I
J. Opt. Soc. Am. 43, 1020-1024 (1953)

Ar	Energy Levels, Wavelengths	Exp

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Analysis of Breit-Pauli transition probabilities for lines in O III
Astrophys. J. 703, 500-506 (2009)

O^{2+}	Trans. prob., Oscill. Strengths	Th

581. G. Brenner, J. R. Crespo López-Urrutia, S. Bernitt, D. Fischer, R. Ginzel, K. Kubiček, V. Mäckel, P. H. Mokler, M. C. Simon, J. Ullrich
On the transition rate of the Fe X red coronal line
Astrophys. J. 703, 68-73 (2009)

Fe^{9+}	Trans. prob., Oscill. Strengths	Exp

582. M. S. Brown, S. R. Federman, R. E. Irving, S. Cheng, L. J. Curtis
Lifetimes and oscillator strengths for ultraviolet transitions in singly ionized copper
Astrophys. J. 702, 880-883 (2009)

Cu^{+}	Trans. prob., Oscill. Strengths	Exp

583. G. Y. Liang, A. D. Whiteford, N. R. Badnell
R-matrix electron-impact excitation data for the Na-like iso-electronic sequence
Astron. Astrophys. 500, 1263-1269 (2009)

Na Z= 12-36	Trans. prob., Oscill. Strengths	Th

584. G. Y. Liang, A. D. Whiteford, N. R. Badnell
R-matrix electron-impact excitation data for B-like Si and its application in cool stars
Astron. Astrophys. 499, 943-954 (2009)

$\mathbf{Si^{9+}}$	Trans. prob., Oscill. Strengths	Th

585. J. Meléndez, B. Barbuy
Both accurate and precise gf-values for Fe II lines
Astron. Astrophys. 497, 611-617 (2009)

$\mathbf{Fe^{+}}$	Trans. prob., Oscill. Strengths	E/T

586. C. E. Hudson, C. A. Ramsbottom, P. H. Norrington, M. P. Scott
Breit-Pauli R-matrix calculation of fine-structure effective collision strengths for the electron impact excitation of Mg V
Astron. Astrophys. 494, 729-737 (2009)

$\mathbf{Mg^{4+}}$	Trans. prob., Oscill. Strengths	Th

587. P. Quinet, V. Fivet, P. Palmeri, É. Biémont, L. Engström, H. Lundberg, H. Nilsson
Branching fractions and A values in singly ionized tantalum (Ta II)
Astron. Astrophys. 493, 711-719 (2009)

$\mathbf{Ta^{+}}$	Trans. prob., Oscill. Strengths	E/T

588. C. E. Hudson
Breit-Pauli R-matrix calculation for fine structure effective collision strengths from electron impact excitation of Mg IX
Astron. Astrophys. 493, 697-710 (2009)

$\mathbf{Mg^{8+}}$	Trans. prob., Oscill. Strengths	Th

589. R. Kisielius, P. J. Storey, G. J. Ferland, F. P. Keenan
Electron-impact excitation of O II fine-structure levels
Mon. Not. R. Astron. Soc. 397, 903-912 (2009)

$\mathbf{O^{+}}$	Trans. prob., Oscill. Strengths	Th

590. G. Malcheva, R. Mayo, M. Ortiz, P. Ruiz, L. Engström, H. Lundberg, H. Nilsson, P. Quinet, É. Biémont, K. Blagoev
Radiative decay data for highly excited Zr I levels
Mon. Not. R. Astron. Soc. 395, 1523-1528 (2009)

Zr	Trans. prob., Oscill. Strengths	E/T

591. M. A. Bautista, C. Ballance, T. R. Gull, H. Hartman, K. Lodders, M. Martínez, M. Meléndez
Scandium and chromium in the strontium filament in the Homunculus of η Carinae
Mon. Not. R. Astron. Soc. 393, 1503-1512 (2009)

$\mathbf{Sc^{+}}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Cr^{+}}$	Trans. prob., Oscill. Strengths	Th

592. M. Andersson
Unexpected lines due to hyperfine interaction
Phys. Scr. T134, 014021 (2009)

Ni Z= 42-60	Trans. prob., Oscill. Strengths	Th
Ga^{+}	Trans. prob., Oscill. Strengths	Th
Xe^{26+}	Trans. prob., Oscill. Strengths	Th

593. O. Zatsarinny, K. Bartschat
B-spline calculations of oscillator strengths in noble gases
Phys. Scr. T134, 014020 (2009)

Ne	Trans. prob., Oscill. Strengths	Th
Ar	Trans. prob., Oscill. Strengths	Th
Kr	Trans. prob., Oscill. Strengths	Th
Xe	Trans. prob., Oscill. Strengths	Th

594. C. Froese Fischer
Evaluating the accuracy of theoretical transition data
Phys. Scr. T134, 014019 (2009)

Li	Trans. prob., Oscill. Strengths	Th
N^{+}	Trans. prob., Oscill. Strengths	Th
S	Trans. prob., Oscill. Strengths	Th
Ar	Trans. prob., Oscill. Strengths	Th

595. J. Reyna Almandos, F. Bredice, M. Raineri, M. Gallardo
Spectral analysis of ionized noble gases and implications for astronomy and laser studies
Phys. Scr. T134, 014018 (2009)

Xe^{8+}	Trans. prob., Oscill. Strengths	Th

596. A. Bacławski, J. Musielok
Analysis of line strength data for the spectra of C(I), N(II), N(I) and O(II)
Acta Phys. Pol. A 116-2, 176-184 (2009)

C	Trans. prob., Oscill. Strengths	E/T
N^{0+--+}	Trans. prob., Oscill. Strengths	E/T
O^{+}	Trans. prob., Oscill. Strengths	E/T

597. Ş. Ateş, G. Çelik
Oscillator strengths for allowed transitions in Li(II)
Acta Phys. Pol. A 116-2, 169-175 (2009)

Li^{0+--+}	Trans. prob., Oscill. Strengths	Th

598. T.-Y. Zhang, N.-W. Zheng
Theoretical study of energy levels and transition probabilities of boron atom
Acta Phys. Pol. A 116-2, 141-153 (2009)

B	Trans. prob., Oscill. Strengths	Th

599. R. O. Jung, J. B. Boffard, L. W. Anderson, C. C. Lin
Branching fractions and transition probabilities for levels of the $5p^5 7p$ configuration of xenon
J. Quant. Spectrosc. Radiat. Transfer 110, 1057-1065 (2009)

Xe	Trans. prob., Oscill. Strengths	Exp

600. H.-P. Garnir, S. Enzonga Yoca, P. Quinet, É. Biémont
Lifetime and transition probability determination in Xe IX
J. Quant. Spectrosc. Radiat. Transfer 110, 284-292 (2009)

Xe^{8+} Trans. prob., Oscill. Strengths E/T

601. V. A. Zilitis
Theoretical determination of oscillator strengths for the principal series of rubidium-like ions by the Dirac-Fock method
Opt. Spectrosc. 107, 54-57 (2009)

Rb Z= 37-47 Trans. prob., Oscill. Strengths Th

602. E. P. Ivanova
Radiative transition probabilities in ions of the silver isoelectronic sequence
Opt. Spectrosc. 107, 1-8 (2009)

Ag Z= 50-86 Trans. prob., Oscill. Strengths Th

603. I. A. Denezhkin, P. P. D'yachenko, V. P. Semenov
Time constants of radiative transitions from the $5d[3/2]_1$ level of a xenon atom
Opt. Spectrosc. 106, 490-494 (2009)

Xe Trans. prob., Oscill. Strengths Exp

604. A. N. Ryabtsev, E. Ya. Kononov, S. S. Churilov
Spectrum of calcium-like copper Cu X
Opt. Spectrosc. 106, 163-169 (2009)

Cu^{9+} Trans. prob., Oscill. Strengths Th

605. A. M. Puchkov, L. N. Labzovskiĭ
Probabilities of forbidden magnetic-dipole transitions in the hydrogen atom and hydrogen-like ions
Opt. Spectrosc. 106, 153-157 (2009)

H Z= 1-100 Trans. prob., Oscill. Strengths Th

606. S. N. Nahar
Allowed and forbidden transition parameters for Fe XV
At. Data Nucl. Data Tables 95, 577-605 (2009)

Fe^{14+} Trans. prob., Oscill. Strengths Th

607. E. Landi, A. K. Bhatia
Atomic data and spectral line intensities for Ni XXV
At. Data Nucl. Data Tables 95, 547-576 (2009)

Ni^{24+} Trans. prob., Oscill. Strengths Th

608. A. E. Kramida, T. Shirai
Energy levels and spectral lines of tungsten, W III through W LXXIV
At. Data Nucl. Data Tables 95, 305-474 (2009)

W^{2+} Trans. prob., Oscill. Strengths Exp

609. N. C. Deb, A. Hibbert
Weighted f-values, A-values, and line strengths for the E1 transitions among $3d^6$, $3d^5 4s$, and $3d^5 4p$ levels of Fe III
At. Data Nucl. Data Tables 95, 184-303 (2009)

Fe^{2+} Trans. prob., Oscill. Strengths Th

610. H.-J. Hou, G. Jiang, F. Hu, L.-H. Hao
Relativistic configuration interaction calculations for the Kα and Kβ X-ray satellites of iron
At. Data Nucl. Data Tables 95, 125-140 (2009)

$\mathbf{Fe}^{16+-24+}$	Trans. prob., Oscill. Strengths	Th

611. U. I. Safronova, A. S. Safronova
Relativistic many-body calculations of excitation energies and transition rates from core-excited states in silverlike ions
Can. J. Phys. 87, 83-94 (2009)

$\mathbf{I}^{6+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Xe}^{7+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Cs}^{8+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Er}^{21+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Yb}^{23+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{W}^{27+}$	Trans. prob., Oscill. Strengths	Th

612. C. Eichhorn, St. Fritzsche, St. Löhle, A. Knapp, M. Auweter-Kurtz
Time-resolved fluorescence spectroscopy of two-photon laser-excited 8p, 9p, 5f, and 6f levels in neutral xenon
Phys. Rev. E 80, 026401 (2009)

Xe	Trans. prob., Oscill. Strengths	Exp

613. J. A. Santana, Y. Ishikawa, E. Träbert
Multireference Møller-Plesset perturbation theory results on levels and transition rates in Al-like ions of iron group elements
Phys. Scr. 79, 065301 (2009)

Al Z= 19-32	Trans. prob., Oscill. Strengths	Th
$\mathbf{Fe}^{13+}$	Trans. prob., Oscill. Strengths	Th

614. L. Natarajan, A. Natarajan
Characteristic trends in the x-ray rates from the 2s3p configuration of He-like ions
Phys. Rev. A 79, 062513 (2009)

He Z= 16-18	Trans. prob., Oscill. Strengths	Th
He Z= 20-28	Trans. prob., Oscill. Strengths	Th
$\mathbf{Si}^{12+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Ga}^{29+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Se}^{32+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Kr}^{34+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Zr}^{38+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Mo}^{40+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Ru}^{42+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Cd}^{46+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Sn}^{48+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Te}^{50+}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Xe}^{52+}$	Trans. prob., Oscill. Strengths	Th

615. O. Zatsarinny, K. Bartschat, S. Gedeon, V. Gedeon, V. Lazur, E. Nagy
Cross sections for electron scattering from magnesium
Phys. Rev. A 79, 052709 (2009)

Mg	Trans. prob., Oscill. Strengths	Th

616. S. N. Nahar, W. Eissner, C. Sur, A. K. Pradhan
A comprehensive set of UV and x-ray radiative transition rates for Fe XVI
Phys. Scr. 79, 035401 (2009)

Fe^{15+}	Trans. prob., Oscill. Strengths	Th

617. K. T. Therkildsen, B. B. Jensen, C. P. Ryder, N. Malossi, J. W. Thomsen
Measurement of the spin-forbidden decay rate $(3s3d)^1D_2 \rightarrow (3s3p)^3P_{2,1}$ in ^{24}Mg
Phys. Rev. A 79, 034501 (2009)

Mg	Trans. prob., Oscill. Strengths	Exp

618. V. G. Ivanov, S. G. Karshenboim
Recoil correction to the decay rate of 2p states in hydrogenlike atoms
Phys. Rev. 79, 032518 (2009)

H Z= 1-100	Trans. prob., Oscill. Strengths	Th

619. O. Yu. Andreev, L. N. Labzowsky, G. Plunien
QED calculation of transition probabilities in two-electron ions
Phys. Rev. A 79, 032515 (2009)

B^{3+}	Trans. prob., Oscill. Strengths	Th
C^{4+}	Trans. prob., Oscill. Strengths	Th
Ne^{8+}	Trans. prob., Oscill. Strengths	Th
Ar^{16+}	Trans. prob., Oscill. Strengths	Th
Fe^{24+}	Trans. prob., Oscill. Strengths	Th
Zn^{28+}	Trans. prob., Oscill. Strengths	Th
Zr^{38+}	Trans. prob., Oscill. Strengths	Th
Sn^{48+}	Trans. prob., Oscill. Strengths	Th
Xe^{52+}	Trans. prob., Oscill. Strengths	Th
Nd^{58+}	Trans. prob., Oscill. Strengths	Th
Yb^{68+}	Trans. prob., Oscill. Strengths	Th
Hg^{78+}	Trans. prob., Oscill. Strengths	Th
Th^{88+}	Trans. prob., Oscill. Strengths	Th
U^{90+}	Trans. prob., Oscill. Strengths	Th
Fm^{98+}	Trans. prob., Oscill. Strengths	Th

620. M. Andersson, Y. Zou, R. Hutton, T. Brage
Hyperfine-dependent lifetimes in Be-like ions
Phys. Rev. A 79, 032501 (2009)

Be Z= 6-9	Trans. prob., Oscill. Strengths	Th
Be Z= 6-17	Trans. prob., Oscill. Strengths	Th
Be Z= 11-17	Trans. prob., Oscill. Strengths	Th
Be Z= 19-22	Trans. prob., Oscill. Strengths	Th
C^{2+}	Trans. prob., Oscill. Strengths	Th
N^{3+}	Trans. prob., Oscill. Strengths	Th
O^{4+}	Trans. prob., Oscill. Strengths	Th
F^{5+}	Trans. prob., Oscill. Strengths	Th
Ne^{6+}	Trans. prob., Oscill. Strengths	Th
Na^{7+}	Trans. prob., Oscill. Strengths	Th
Mg^{8+}	Trans. prob., Oscill. Strengths	Th
Al^{9+}	Trans. prob., Oscill. Strengths	Th
Si^{10+}	Trans. prob., Oscill. Strengths	Th
P^{11+}	Trans. prob., Oscill. Strengths	Th
S^{12+}	Trans. prob., Oscill. Strengths	Th

Cl^{13+}	Trans. prob., Oscill. Strengths	Th
K^{15+}	Trans. prob., Oscill. Strengths	Th
Ca^{16+}	Trans. prob., Oscill. Strengths	Th
Sc^{17+}	Trans. prob., Oscill. Strengths	Th
Ti^{18+}	Trans. prob., Oscill. Strengths	Th

621. S. S. Tayal
Oscillator strengths for allowed transitions in neutral oxygen
Phys. Scr. 79, 015303 (2009)

O	Trans. prob., Oscill. Strengths	Th

622. G. Buica, T. Nakajima
Multiphoton ionization through the triplet states of Mg by linearly and circularly polarized laser pulses
Phys. Rev. A 79, 013419 (2009)

Mg	Trans. prob., Oscill. Strengths	Th

623. J. Mitroy, M. S. Safronova
Polarizabilities of the Mg^{+} and Si^{3+} ions
Phys. Rev. A 79, 012513 (2009)

Na Z= 11-14	Trans. prob., Oscill. Strengths	Th

624. Ş. Ateş, G. Tekeli, G. Çelik, E. Akin, M. Taşer
Oscillator strengths for singly ionized oxygen
Eur. Phys. J. D 54, 21-24 (2009)

O^{+}	Trans. prob., Oscill. Strengths	Th

625. K. Koc
Relativistic multireference configuration interaction calculations of lifetime of $2s^22p$ $^2P_{3/2}$ level along boron isoelectronic sequence
Eur. Phys. J. D 53, 9-14 (2009)

B Z= 14-30	Trans. prob., Oscill. Strengths	Th

626. J. G. Li, P. Jönsson, G. Gaigalas, C. Z. Dong
Hyperfine induced 1s2s $^1S_0 \rightarrow 1s^2$ $^1S_0$ M1 transition of He-like ions
Eur. Phys. J. D 51, 313-317 (2009)

C^{4+}	Trans. prob., Oscill. Strengths	Th
F^{7+}	Trans. prob., Oscill. Strengths	Th
Si^{12+}	Trans. prob., Oscill. Strengths	Th
Ti^{20+}	Trans. prob., Oscill. Strengths	Th
Fe^{24+}	Trans. prob., Oscill. Strengths	Th
Ga^{29+}	Trans. prob., Oscill. Strengths	Th
Rb^{35+}	Trans. prob., Oscill. Strengths	Th
Mo^{40+}	Trans. prob., Oscill. Strengths	Th
Rh^{43+}	Trans. prob., Oscill. Strengths	Th
Sn^{48+}	Trans. prob., Oscill. Strengths	Th
Xe^{52+}	Trans. prob., Oscill. Strengths	Th
Eu^{61+}	Trans. prob., Oscill. Strengths	Th
Lu^{69+}	Trans. prob., Oscill. Strengths	Th
Ir^{75+}	Trans. prob., Oscill. Strengths	Th

627. A. E. Kingston, A. Hibbert
Transitions from the ground state of Ti IV to excited doublet and quartet states
J. Phys. B 42, 185004 (2009)

Ti^{3+}	Trans. prob., Oscill. Strengths	Th

628. U. I. Safronova, A. S. Safronova, P. Beiersdorfer
Excitation energies, radiative and autoionization rates, dielectronic satellite lines and dielectronic recombination rates for excited states of Mg-like W from Na-like W
J. Phys. B 42, 165010 (2009)

W^{62+}	Trans. prob., Oscill. Strengths	Th

629. J. D. Hey
The McLean-Watson line strength formula and its implementation
J. Phys. B 42, 125701 (2009)

H Z= 1-10	Trans. prob., Oscill. Strengths	Th

630. G. Dixit, S. Majumder
Reply to the comment on 'Theoretical spectroscopic studies of the atomic transitions and lifetimes of low-lying states in Ti IV'
J. Phys. B 42, 088002 (2009)

Ti^{3+}	Trans. prob., Oscill. Strengths	Th

631. A. E. Kingston
Comment on 'Theoretical spectroscopic studies of the atomic transitions and lifetimes of low-lying states in Ti IV'
J. Phys. B 42, 088001 (2009)

Ti^{3+}	Trans. prob., Oscill. Strengths	Th

632. N. C. Deb, A. Hibbert
Electric quadrupole and magnetic dipole transitions among $3d^6$ levels of Fe III
J. Phys. B 42, 065003 (2009)

Fe^{2+}	Trans. prob., Oscill. Strengths	Th

633. W. L. Wiese, J. R. Fuhr
Accurate atomic transition probabilities for hydrogen, helium, and lithium
J. Phys. Chem. Ref. Data 38, 565-726 (2009)

H	Trans. prob., Oscill. Strengths	E/T
He	Trans. prob., Oscill. Strengths	E/T
He^{+}	Trans. prob., Oscill. Strengths	E/T
Li	Trans. prob., Oscill. Strengths	E/T
Li^{+}	Trans. prob., Oscill. Strengths	E/T
D	Trans. prob., Oscill. Strengths	E/T
T	Trans. prob., Oscill. Strengths	E/T

634. M.-H. Hu, Z.-W. Wang
Oscillator strengths for 2 ^{2}S–n ^{2}P transitions of the lithium isoelectronic sequence from Z = 11 to 20
Chin. Phys. B 18, 2244-2249 (2009)

Li Z= 11-20	Trans. prob., Oscill. Strengths	Th

635. J. Y. Zhang, J. Mitroy, H. R. Sadeghpour, M. W. J. Bromley
Long-range interactions of copper and silver atoms with hydrogen, helium, and rare-gas atoms
Phys. Rev. A 78, 062710 (2008)

Cu	Trans. prob., Oscill. Strengths	Th
Ag	Trans. prob., Oscill. Strengths	Th

636. M. Andersson, Y. Liu, C. Y. Chen, R. Hutton, Y. Zou, T. Brage
Hyperfine-interaction-dependent 4s4p $^3P_2$ lifetimes in Zn-like ions
Phys. Rev. A 78, 062505 (2008)

Zn Z= 30-36	Trans. prob., Oscill. Strengths	Th
Nb^{11+}	Trans. prob., Oscill. Strengths	Th
Mo^{12+}	Trans. prob., Oscill. Strengths	Th

637. G. S. Adkins, J. Sapirstein
Recoil corrections to decay rates of hydrogenic ions
Phys. Rev. A 78, 062503 (2008)

H Z= 1-100	Trans. prob., Oscill. Strengths	Th

638. G. Çelik, Ş. Ateş
Investigation of the effects of expectation values for radii on the determination of transition probabilities using WBEPM theory
J. Astrophys. Astron. 29, 367-378 (2008)

N	Trans. prob., Oscill. Strengths	Th

639. S. N. Nahar
Electron-ion recombination rate coefficients and photoionization cross sections for astrophysically abundant elements. XII. Na IX, Na X, Mg X, and Mg XI for ultraviolet and X-ray modeling
Astrophys. J., Suppl. Ser. 167, 315-333 (2006)

$Na^{9+--10+}$	Trans. prob., Oscill. Strengths	Th
$Mg^{10+--11+}$	Trans. prob., Oscill. Strengths	Th

640. T. G. Slanger, P. C. Cosby, B. D. Sharpee, K. R. Minschwaner, D. E. Siskind
O($^1S \rightarrow {}^1D, {}^3P$) branching ratio as measured in the terrestrial nightglow
J. Geophys. Res. 111, p.A12318 (2006)

O	Trans. prob., Oscill. Strengths	Exp

641. S. D. Loch, J. Colgan, M. C. Witthoeft, M. S. Pindzola, C. P. Ballance, D. M. Mitnik, D. C. Griffin, M. G. O'Mullane, N. R. Badnell, H. P. Summers
Generalised collisional-radiative model for light elements. A: Data for the Li isonuclear sequence
At. Data Nucl. Data Tables 92, 813-851 (2006)

Li^{0+--+}	Trans. prob., Oscill. Strengths	Th
Li^{0+--2+}	Trans. prob., Oscill. Strengths	Th

642. M. Lu, M. F. Gharaibeh, G. Alna'washi, R. A. Phaneuf, A. L. D. Kilcoyne, E. Levenson, A. S. Schlachter, A. Müller, S. Schippers, J. Jacobi, S. W. J. Scully, C. Cisneros
Photoionization and electron-impact ionization of Kr^{5+}
Phys. Rev. A 74, 012703 (2006)

Kr^{5+} Trans. prob., Oscill. Strengths E/T

643. G. W. F. Drake
High precision calculations for helium
Springer Handbook of Atomic, Molecular, and Optical Physics, New York ¡br¿Springer Science+Business Media, Inc., (2006)

He Z= 2-5 Trans. prob., Oscill. Strengths Th

644. M. C. Chidichimo, G. Del Zanna, H. E. Mason, N. R. Badnell, J. A. Tully, K. A. Berrington
Atomic data from the IRON project – LVI. Electron excitation of Be-like Fe XXIII for the n=2,3,4 configurations
Astron. Astrophys. 430, 331-341 (2005)

Fe^{22+} Trans. prob., Oscill. Strengths Th

645. S. S. Tayal, O. Zatsarinny
B-spline R-matrix with pseudostates approach for electron impact excitation of atomic nitrogen
J. Phys. B 38, 3631-3645 (2005)

N Trans. prob., Oscill. Strengths Th

646. J.-L. Zeng, G. Zhao, J.-M. Yuan
X-ray emission spectra of Ni-like gold ions under coronal plasma condition
Chin. Phys. Lett. 22, 1972-1975 (2005)

Au^{51+} Trans. prob., Oscill. Strengths Th

647. N.-W. Zheng, T. Wang, D.-X. Ma, T. Zhou, J. Fan
Weakest bound electron potential model theory
Int. J. Quantum Chem. 98, 281-290 (2004)

F^{+} Trans. prob., Oscill. Strengths Th

648. T. Kai, R. Srivastava, S. Nakazaki
Electron-impact excitation of Si^{2+}: Differential cross sections and Stokes parameters
J. Phys. B 37, 2045-2055 (2004)

Si^{2+} Trans. prob., Oscill. Strengths Th

649. T. W. Gorczyca, C. N. Kodituwakku, K. T. Korista, O. Zatsarinny, N. R. Badnell, E. Behar, M. H. Chen, D. W. Savin
Assessment of the fluorescence and Auger database used in plasma modeling
Astrophys. J. 592, 636-643 (2003)

Be Z= 5-30 Trans. prob., Oscill. Strengths Th
F Z= 10-30 Trans. prob., Oscill. Strengths Th

650. M. C. Chidichimo, N. R. Badnell, J. A. Tully
Atomic data from the IRON Project. LII. Electron excitation of Ni^{+24}
Astron. Astrophys. 401, 1177-1183 (2003)

Ni^{24+} Trans. prob., Oscill. Strengths Th

651. E. P. Ivanova
Spectroscopic constants of VUV laser transitions in ions of the palladium isoelectronic sequence
Opt. Spectrosc. 94, 151-156 (2003)

Pd Z= 50-63	Trans. prob., Oscill. Strengths	Th

652. C. A. Ramsbottom, K. L. Bell, F. P. Keenan, A. Matthews
Effective collision strengths for electron impact excitation of Si VIII
At. Data Nucl. Data Tables 85, 69-82 (2003)

$\mathbf{Si}^{7+}$	Trans. prob., Oscill. Strengths	Th

653. Y. Zou, J. R. Crespo López-Urrutia, J. Ullrich
Observation of dielectronic recombination through two-electron–one-photon correlative stabilization in an electron-beam ion trap
Phys. Rev. A 67, 042703 (2003)

$\mathbf{Ar}^{15+}$	Trans. prob., Oscill. Strengths	Exp

654. M. A. Bautista
Electron impact excitation of helium-like neon
J. Phys. B 36, 1503-1514 (2003)

$\mathbf{Ne}^{8+}$	Trans. prob., Oscill. Strengths	Th

655. D. M. Mitnik, D. C. Griffin, C. P. Ballance, N. R. Badnell
An R-matrix with pseudo-states calculation of electron-impact excitation in $\mathbf{C}^{2+}$
J. Phys. B 36, 717-730 (2003)

$\mathbf{C}^{2+}$	Trans. prob., Oscill. Strengths	Th

656. G.-X. Chen, A. K. Pradhan, W. Eissner
Breit-Pauli R-matrix calculations for electron impact excitation of Fe XVII: A benchmark study
J. Phys. B 36, 453-477 (2003)

$\mathbf{Fe}^{16+}$	Trans. prob., Oscill. Strengths	Th

657. L. Natarajan
Relativistic configuration interaction calculations on the Kα x-ray satellites of argon
J. Phys. B 36, 105-118 (2003)

$\mathbf{Ar}^{9+--16+}$	Trans. prob., Oscill. Strengths	Th

658. E. Olalla, N. J. Wilson, K. L. Bell, I. Martin, A. Hibbert
Inner-shell photoionization of O III
Mon. Not. R. Astron. Soc. 332, 1005-1008 (2002)

$\mathbf{O}^{3+}$	Trans. prob., Oscill. Strengths	Th

659. S. S. Churilov
Analysis of the spectrum of the Zn-like Kr VII ion: Highly excited 4p4d and 4p5s configurations
Opt. Spectrosc. 93-6, 826-832 (2002)

$\mathbf{Kr}^{6+}$	Trans. prob., Oscill. Strengths	Th

660. J. R. Crespo López-Urrutia, P. Beiersdorfer, K. Widmann, V. Decaux
Visible spectrum of highly charged ions: The forbidden optical lines of Kr, Xe, and Ba ions in the Ar I to Kr I isoelectronic sequence
Can. J. Phys. 80, 1687-1700 (2002)

$\mathbf{Kr^{11+-18+}}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Kr^{22+}}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Xe^{18+}}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Xe^{31+-32+}}$	Trans. prob., Oscill. Strengths	Th
$\mathbf{Ba^{31+-34+}}$	Trans. prob., Oscill. Strengths	Th

661. S. S. Churilov, A. N. Ryabtsev, W.-Ü. L. Tchang-Brillet, J.-F. Wyart
Analysis of the spectra of Pd-like ions from Xe IX through Ce XIII
Phys. Scr. 66, 293-307 (2002)

Pd Z= 54-58	Trans. prob., Oscill. Strengths	Th

662. R. R. Kildiyarova, A. N. Ryabtsev, S. S. Churilov, V. I. Azarov
Analysis of the $5d^3$-$5d^2$6p transitions of the Pt VIII and Au IX ions
Phys. Scr. 66, 51-58 (2002)

Lu Z= 78-79	Trans. prob., Oscill. Strengths	Th

663. S. S. Churilov, Y. N. Joshi
Revised and extended analysis of six times ionized xenon: Xe VII
Phys. Scr. 65, 35-39 (2002)

$\mathbf{Xe^{6+}}$	Trans. prob., Oscill. Strengths	Th

664. F. Delahaye, A. K. Pradhan
Electron impact excitation of helium-like oxygen up to n = 4 levels including radiation damping
J. Phys. B 35, 3377-3390 (2002)

$\mathbf{O^{6+}}$	Trans. prob., Oscill. Strengths	Th

665. C. F. Fischer, P. Jönsson
Landé g factors for $2p^4(^3P)$3p and $2p^4(^3P)$3d states of Ne II
J. Mol. Struct. (Theochem.) 537, 55-62 (2001)

$\mathbf{Ne^{+}}$	Trans. prob., Oscill. Strengths	Th

666. M. A. Bautista
Atomic data from the Iron Project – XLVII. Electron impact excitation of Ni III
Astron. Astrophys. 365, 268-274 (2001)

$\mathbf{Ni^{2+}}$	Trans. prob., Oscill. Strengths	Th

667. S. S. Tayal
Electron impact excitation collision strengths for Fe X
Astrophys. J., Suppl. Ser. 132, 117-125 (2001)

$\mathbf{Fe^{9+}}$	Trans. prob., Oscill. Strengths	Th

668. R. Doron, U. Feldman
Visible and near UV M1 transitions within N-shell ground configurations of heavy ions predicted to be bright in low-density plasmas
Phys. Scr. 64, 319-325 (2001)

Sm^{22+}	Trans. prob., Oscill. Strengths	Th
Hf^{32+}	Trans. prob., Oscill. Strengths	Th
$W^{30+--36+}$	Trans. prob., Oscill. Strengths	Th
W^{42+}	Trans. prob., Oscill. Strengths	Th
Pb^{39+}	Trans. prob., Oscill. Strengths	Th
Pb^{41+}	Trans. prob., Oscill. Strengths	Th
$Pb^{42+--44+}$	Trans. prob., Oscill. Strengths	Th
Pb^{50+}	Trans. prob., Oscill. Strengths	Th
Fr^{47+}	Trans. prob., Oscill. Strengths	Th
U^{49+}	Trans. prob., Oscill. Strengths	Th
U^{51+}	Trans. prob., Oscill. Strengths	Th
$U^{52+--54+}$	Trans. prob., Oscill. Strengths	Th
U^{60+}	Trans. prob., Oscill. Strengths	Th

669. V. I. Azarov, W.-Ü L. Tchang-Brillet, J.-F. Wyart, F. Launay, M. Benharrous
Determination of the $3d^3 4d$ and $3d^3 5s$ configurations of Fe V
Phys. Scr. 63, 438-461 (2001)

Fe^{4+}	Trans. prob., Oscill. Strengths	Th

670. S. S. Churilov, Y. N. Joshi
Observation of the strongest $5s^2 5p^6 5d$-($5s^2 5p^5 5d6s$+$5s^2 5p^6 7p$) transitions in Au XI to Bi XV ions
Phys. Scr. 63, 363-366 (2001)

Tm Z= 79-83	Trans. prob., Oscill. Strengths	Th

671. S. Majumder, G. Gopakumar, H. Merlitz, B. P. Das
Relativistic coupled cluster calculations using hybrid basis functions
J. Phys. B 34, 4821-4829 (2001)

Mg^{+}	Trans. prob., Oscill. Strengths	Th

672. J.-L. Zeng, J.-M. Yuan, Q.-S. Lu
Photoionization of O III low-lying states: autoionization resonance energies and widths of some 1s-2p excited states
J. Phys. B 34, 2823-2833 (2001)

O^{3+}	Trans. prob., Oscill. Strengths	Th

673. L. Natarajan, Y. G. Mulye
Multi-configuration Dirac-Fock and configuration-interaction calculations of Ar^{7+} to Ar^{17+} ions
J. Phys. B 34, 1839-1854 (2001)

$Ar^{7+--17+}$	Trans. prob., Oscill. Strengths	Th

674. D. C. Griffin, M. S. Pindzola, N. R. Badnell
Electron-impact excitation of Fe^{7+}
Astron. Astrophys., Suppl. Ser. 142, 317-323 (2000)

Fe^{7+}	Trans. prob., Oscill. Strengths	Th

675. P. J. Storey, H. E. Mason, P. R. Young
Atomic data from the IRON Project – XL. Electron impact excitation of the Fe XIV EUV transitions
Astron. Astrophys., Suppl. Ser. 141, 285-296 (2000)

Fe^{13+} Trans. prob., Oscill. Strengths Th

676. D. C. Griffin, N. R. Badnell
Electron-impact excitation of Ne^{4+}
J. Phys. B 33, 4389-4408 (2000)

Ne^{4+} Trans. prob., Oscill. Strengths Th

677. O. Zatsarinny, C. Froese Fischer
The use of basis splines and non-orthogonal orbitals in R-matrix calculations: Application to Li photoionization
J. Phys. B 33, 313-341 (2000)

Li^{+} Trans. prob., Oscill. Strengths Th

678. C. R. Proffitt, P. Jönsson, U. Litzén, J. C. Pickering, G. M. Wahlgren
Goddard high-resolution spectrograph observations of the B III resonance doublet in early B stars: Abundances and isotope ratios
Astrophys. J. 516, 342-348 (1999)

B^{2+} Trans. prob., Oscill. Strengths Th

679. W. Eissner, M. E. Galavís, C. Mendoza, C. J. Zeippen
Atomic data from the IRON Project. XXXVIII. Electron impact excitation of the fine-structure transitions in the n=3 complex of Fe XV
Astron. Astrophys., Suppl. Ser. 137, 165-173 (1999)

Fe^{14+} Trans. prob., Oscill. Strengths Th

680. A. Langereis, J. Nordgren, S. Bliman, M. Cornille, R. Bruch, R. A. Phaneuf, D. Schneider
Experimental study of single- and double-electron transfer in slow Ne^{8+}+He collisions using photon and electron spectroscopy
Phys. Rev. A 60, 2917-2930 (1999)

Ne^{6+} Trans. prob., Oscill. Strengths Th

681. V. Gedeon, V. Lengyel, O. Zatsarinny, C. A. Kocher
Electron-impact excitation of the Mg atom from the ground and metastable states: R-matrix calculation with pseudostates
Phys. Rev. A 59, 2016-2029 (1999)

Mg Trans. prob., Oscill. Strengths Th

682. L. Féret, J. Pascale
Study of the multicharged ion Ar^{6+} by a configuration-interaction Hartree-Fock method using a pseudopotential
J. Phys. B 32, 4175-4192 (1999)

Ar^{6+} $^{--7+}$ Trans. prob., Oscill. Strengths Th
Ar^{7+} Trans. prob., Oscill. Strengths Th

683. M. A. Bautista, A. K. Pradhan
Ionization structure and spectra of iron in gaseous nebulae
Astrophys. J. 492, 650-676 (1998)

Fe Trans. prob., Oscill. Strengths Exp

684. K. R. Karim, L. Logan
Radiative and Auger transitions from variously ionized neon atoms with configurations $1s2s^m2p^n$
Phys. Scr. 58, 574-582 (1998)

$Ne^{3+–7+}$	Trans. prob., Oscill. Strengths	Th

685. A. K. Das, T. K. Ghosh, D. Ray, T. K. Mukherjee, P. K. Mukherjee
Quadrupolar transitions in chlorine isoelectronic ions
Phys. Scr. 58, 315-318 (1998)

Cl Z= 17-24	Trans. prob., Oscill. Strengths	Th

686. S. G. Karshenboim
Two-body effects in the decay rate of atomic levels
Phys. Rev. A 79, 059901 (1997)

H Z= 1-100	Trans. prob., Oscill. Strengths	Th

687. V. G. Ivanov, S. G. Karshenboim
Radiative corrections to dipole matrix elements in hydrogen-like atoms
Phys. Lett. A 210, 313 (1996)

H Z= 1-10	Trans. prob., Oscill. Strengths	Th

688. J. Z. Klose, J. R. Fuhr, W. L. Wiese
Atomic branching ratio data for nitrogen-like species
J. Quant. Spectrosc. Radiat. Transfer 55, 413-430 (1996)

N	Trans. prob., Oscill. Strengths	E/T
O^{+}	Trans. prob., Oscill. Strengths	E/T
Ne^{3+}	Trans. prob., Oscill. Strengths	E/T

689. Y.-D. Wang, Z.-H. Yang, X.-W. Ma, Q. Xu, H.-P. Liu, M.-C. Zhao
Studies of de-excited spectra of heavy ions Fe I and Cu I at low energy
Sci. China, Ser. A 37-5, 573-579 (1994)

Fe	Trans. prob., Oscill. Strengths	Exp
Cu	Trans. prob., Oscill. Strengths	Exp

690. J. Z. Klose, T. M. Deters, J. R. Fuhr, W. L. Wiese
Atomic branching ratio data for carbon-like ions
J. Quant. Spectrosc. Radiat. Transfer 50, 1-6 (1993)

C Z= 6-10	Trans. prob., Oscill. Strengths	E/T

691. F. Robicheaux, C. H. Greene
Valence-shell photoabsorption spectra of C, Si, Ge, and Sn
Phys. Rev. A 47, 4908-4919 (1993)

C	Trans. prob., Oscill. Strengths	Th
Si	Trans. prob., Oscill. Strengths	Th

692. J. Z. Klose, J. R. Fuhr, M. S. Price, W. L. Wiese
Atomic branching ratio data for boron-like ions
J. Quant. Spectrosc. Radiat. Transfer 48, 33-39 (1992)

B Z= 6-8	Trans. prob., Oscill. Strengths	E/T

693. J. O. Ekberg, A. Redfors, C. M. Brown, U. Feldman, J. F. Seely
Transitions and energy levels in Al-like Ge XX, Se XXII, Sr XXVI, Y XXVII and Zr XXVIII
Phys. Scr. 44, 539-547 (1991)

$\mathbf{Ge}^{19+}$	Trans. prob., Oscill. Strengths		Th
$\mathbf{Se}^{21+}$	Trans. prob., Oscill. Strengths		Th
$\mathbf{Sr}^{25+}$	Trans. prob., Oscill. Strengths		Th
$\mathbf{Y}^{26+}$	Trans. prob., Oscill. Strengths		Th
$\mathbf{Zr}^{27+}$	Trans. prob., Oscill. Strengths		Th

694. K. S. Baliyan, A. E. Kingston
The photoionization of nitrogen-like Al^{6+} from its ground state
J. Phys. B 24, 4743-4758 (1991)

$\mathbf{Al}^{7+}$	Trans. prob., Oscill. Strengths		Th

695. J. Nilsen, U. I. Safronova, M. S. Safronova
Z-dependences of the atomic characteristics for selected 2l4l′ states
J. Quant. Spectrosc. Radiat. Transfer 43, 445-450 (1990)

He Z= 10-54	Trans. prob., Oscill. Strengths		Th

696. K. Aashamar, T. M. Luke
An efficient method for computing relativistic mixing in complex spectra: application to sextet-quartet mixing in Cr II
J. Phys. B 23, L733-L738 (1990)

$\mathbf{Cr}^{+}$	Trans. prob., Oscill. Strengths		Th

697. C. Froese Fischer
Numerical MC SCF procedures for the study of atomic structures
Quantum Chemistry: Basic aspects, actual trends – Proceedings of an international workshop on quantum chemistry, Girona, Spain, 13-18 June 1988 (Studies in Physical and Theoretical Chemistry, Vol. 62), Amsterdam, Netherlands ¡br¿Elsevier Science B.V., (1989)

O	Trans. prob., Oscill. Strengths		Th

3.2 Atomic and Molecular Collisions

3.2.1 Photon Collisions

698. X.-J. Liu, N. Saito, H. Fukuzawa, Y. Morishita, S. Stoychev, A. Kuleff, H. Suzuki, Y. Tamenori, R. Richter, G. Pruemper, K. Ueda
Evidence of sequential interatomic decay in argon trimers obtained by electron-triple-ion coincidence spectroscopy.
J. Phys. B 40, F1 (2007)

$\mathbf{h\nu + Ar_3}$	Photodissociation	262 eV	Exp
$\mathbf{h\nu + Ar_3}$	Photoionization	262 eV	Exp

699. J. Adachi, K. Ito, H. Yoshii, M. Yamazaki, A. Yagashita, M. Stener, P. Decleva
Site-specific photoemission dynamics of N_2O molecules probed by fixed-molecule core-level photoelectron angular distributions.
J. Phys. B 40, 29 (2007)

$\mathbf{h\nu + N_2O}$	Photoionization	410−600 eV	E/T

700. J. P. Brichta, S. J. Walker, R. Helsten, J. H. Sanderson
Ultrafast imaging of multielectronic dissociative ionization of CO_2 in an intense laser field.
J. Phys. B 40, 117 (2007)

hν + CO_2	Photodissociation	800 nm	Exp
hν + CO_2	Photoionization	800 nm	Exp

701. T. K. Kjeldsen, L. B. Madsen
Alignment-dependent above-threshold ionization of molecules.
J. Phys. B 40, 237 (2007)

hν + N_2	Photoionization	800 nm	Th
hν + O_2	Photoionization	800 nm	Th
hν + C_2H_4	Photoionization	800 nm	Th
hν + C_6H_6	Photoionization	800 nm	Th

702. M. Glass-Maujean, S. Klumpp, L. Werner, A. Ehresmann, H. Schmoranzer
Observation of the oscillating absorption spectrum of a double-well state: The B"B(overbar) $^1\Sigma_u{}^+$ state of H_2.
J. Phys. B 40, F19 (2007)

hν + H_2	Photodissociation	71−76 nm	Th
hν + H_2	Photoexcitation	71−76 nm	Th

703. J. E. Hansen, H. Kjeldsen, F. Folkmann, M. Martins, J. B. West
Absolute photoionization cross sections of the ions Ca^+ - Ni^+.
J. Phys. B 40, 293 (2007)

hν + Ca^+	Photoionization	30−80 eV	E/T
hν + Ti^+	Photoionization	30−80 eV	E/T
hν + V^+	Photoionization	30−80 eV	E/T
hν + Cr^+	Photoionization	30−80 eV	E/T
hν + Mn^+	Photoionization	30−80 eV	E/T
hν + Fe^+	Photoionization	30−80 eV	E/T
hν + Co^+	Photoionization	30−80 eV	E/T
hν + Ni^+	Photoionization	30−80 eV	E/T
hν + Se^+	Photoionization	30−80 eV	E/T

704. Q. Wu, G.W.F. Drake
Hyperfine structure of the 2^3P state of ^3He with and without an external magnetic field.
J. Phys. B 40, 393 (2007)

hν + He	Photoexcitation		Th

705. S. Barmaki, H. Bachau
Coulomb explosion of $H_2{}^+$ wave packet in ultrashort XUV laser fields.
J. Phys. B 40, 463 (2007)

hν + $H_2{}^+$	Photodissociation	1.5−3 a.u.	Th
hν + $H_2{}^+$	Photoexcitation	1.5−3 a.u.	Th
hν + $H_2{}^+$	Photoionization	1.5−3 a.u.	Th

706. X.-J. Liu, R. R. Lucchese, A. N. Grum-Grzhimailo, Y. Morishita, N. Saito, G. Pruemper, K. Ueda
Molecular-frame photoelectron and electron-frame photoion angular distributions and their interrelation.
J. Phys. B 40, 485 (2007)

hν + NO	Photoionization	412 eV	E/T

707. X. M. Tong, C. D. Lin
Carrier-envelope phase dependence of nonsequential double ionization of H_2 by few-cycle laser pulses.
J. Phys. B 40, 641 (2007)

hν + H_2	Photoionization	10^{14} W/cm^2	Th

708. C. Bouri, L. Malegat, P. Selles, M. G. Kwato Njock
Numerical test of the Wannier threshold law for double photoionization of helium.
J. Phys. B 40, F51 (2007)

hν + He	Photoionization	79.13−86.0 eV	Th

709. A. M. Covington, R. G. Kraus, E. D. Emmons, S. S. Duvvuri, V. T. Davis, D. Calabrese, D. D. Davis, C. Cisneros, A. S. Schlachter, M. S. Gulley, D. Hanstorp, J. S. Thompson, D. J. Pegg
Inner-shell photodetachment from the K^- ion.
J. Phys. B 40, 935 (2007)

hν + K^-	Photodetachment	21−24.5 eV	Exp

710. D. Cubaynes, H.-L. Zhou, N. Berrah, J.-M. Bizau, J. D. Bozek, S. Canton, S. Diehl, X.-Y. Han, A. Hibbert, E. T. Kennedy, S. T. Manson, L. Voky, F. J. Wuilleumier
Dynamical and relativistic effects in experimental and theoretical studies of inner-shell photoionization of sodium.
J. Phys. B 40, F121 (2007)

hν + Na	Photoionization	40−69 eV	E/T

711. J. Wu, H. Zeng, C. Guo
Single-ionization-induced dissociation of heteronuclear diatomic molecules in strong fields.
J. Phys. B 40, 1095 (2007)

hν + CO	Photodissociation	800 nm	Exp
hν + NO	Photodissociation	800 nm	Exp
hν + CO	Photoionization	800 nm	Exp
hν + NO	Photoionization	800 nm	Exp

712. C. A. Hunniford, S.W.J. Scully, K. F. Dunn, C. J. Latimer
Fragment anion spectroscopy of water in the inner and outer valence regions.
J. Phys. B 40, 1225 (2007)

hν + H_2O	Photodissociation	15−50 eV	Exp
hν + D_2O	Photodissociation	15−50 eV	Exp
hν + H_2O	Photoionization	15−50 eV	Exp
hν + D_2O	Photoionization	15−50 eV	Exp

713. V. L. Sukhorukov, I. D. Petrov, Ph. V. Demekhin, H. Schmoranzer, S. Mickat, S. Kammer, K.-H. Schartner, S. Klumpp, L. Werner, A. Ehresmann
Interaction between doubly-excited $4p^4n\ell$ n'ℓ' resonances in KrI.
J. Phys. B 40, 1295 (2007)

hν + Kr	Fluorescence	27.8−29.45 eV	Exp
hν + Kr	Photoionization	27.8−29.45 eV	Exp

714. A. Afaq, M. L. Du
A theoretical imaging method for the photodetachment of H^- near a reflecting surface.
J. Phys. B 40, 1309 (2007)

hν + H$^-$	Photodetachment	0.75−1.1 eV	Th

715. L.A.A. Nikolopoulos, P. Lambropoulos
Time-dependent theory of double ionzation of helium under XUV radiation.
J. Phys. B 40, 1347 (2007)

hν + He	Photoionization	24−50 eV	Th
nhν + He	Photoionization	24−50 eV	Th

716. K.-H. Schartner, R. Schill, D. Hasselkamp, S. Mickat, S. Kammer, L. Werner, S. Klumpp, A. Ehresmann, H. Schmoranzer, B. M. Lagutin, V. L. Sukhorukov
Interference between resonant Raman Auger decay and direct excitation manifested in orientation and alignment of KrII $4p^4(^1D)5p\ ^2P_{3/2}$ ions.
J. Phys. B 40, 1443 (2007)

hν + Kr	Photoexcitation	90.8−92.9 eV	E/T
hν + Kr	Photoionization	90.8−92.9 eV	E/T

717. G. Tanner, N. N. Choi, M.-H. Lee, A. Czasch, R. Doerner
Evidence of triple collision dynamics in partial photo-ionization cross sections of helium.
J. Phys. B 40, F157 (2007)

hν + He	Photoexcitation	78.85 eV	Th
hν + He	Photoionization	78.85 eV	Th

718. K. Jakubowska, G. Vall-llosera, A. Kivimaeki, M. Coreno, E. Melero Garcia, M. Stankiewicz, E. Rachlew
Lyman and Balmer emission following core excitations in methoane and ammonia molecules.
J. Phys. B 40, 1489 (2007)

hν + CH_4	Fluorescence	287−406 eV	Exp
hν + NH_3	Fluorescence	287−406 eV	Exp
hν + CH_4	Photoexcitation	287−406 eV	Exp
hν + NH_3	Photoexcitation	287−406 eV	Exp

719. E. G. Drukarev, A. I. Mikhailov, I. A. Mikhailov, W. Scheid
Excitation of atoms by high-energy photons.
J. Phys. B 40, 1501 (2007)

hν + A	Photoexcitation	10 MeV	Th

720. G. Ledru, F. Marchal, N. Merbahi, J. P. Gardou, N. Sewraj
Study of the formation and decay of KrXe* excimers at room temperature following selective excitation of the xenon 6s states.
J. Phys. B 40, 1651 (2007)

hν + Xe_2	Fluorescence	292−299 nm	Exp
hν + Xe_2^*	Fluorescence	292−299 nm	Exp
hν + $KrXe^*$	Fluorescence	292−299 nm	Exp
hν + Xe_2	Photoexcitation	292−299 nm	Exp
hν + Xe_2^*	Photoexcitation	292−299 nm	Exp
hν + $KrXe^*$	Photoexcitation	292−299 nm	Exp

721. J. S. Parker, K. J. Meharg, G. A. McKenna, K. T. Taylor
Single-ionization of helium at Ti:Sapphire wavelengths: Rates and scaling laws.
J. Phys. B 40, 1729 (2007)

hν + He	Photoionization	390−780 nm	Th
nhν + He	Photoionization	390−780 nm	Th

722. I. Dumitriu, Y. V. Vanne, M. Awasthi, A. Saenz
Photoionization of the alkali dimer cations $Li_2{}^+$, $Na_2{}^+$ and $LiNa^+$.
J. Phys. B 40, 1821 (2007)

hν + $\mathbf{Li_2{}^+}$	Photoionization	10−100 eV	Th
hν + $\mathbf{Na_2{}^+}$	Photoionization	10−100 eV	Th
hν + $\mathbf{LiNa^+}$	Photoionization	10−100 eV	Th

723. I. C. Walker, D.M.P. Holland, D. A. Shaw, I. J. McEwen, M. F. Guest
The electronic states of cyclopropane studied by VUV absorption and ab initio multireference configuration interaction calculations.
J. Phys. B 40, 1875 (2007)

hν + $\mathbf{C_3H_6}$	Total Absorption, Scattering	7−30 eV	E/T

724. S. Sheinerman, P. Lablanquie, F. Penent
Double photoionization near the inner-atomic shell threshold: Dynamics of two-electron emission.
J. Phys. B 40, 1889 (2007)

hν + Kr	Photoionization	94.74−95.24 eV	Th

725. T. Topcu, F. Robicheaux
Chaotic ionization of a highly excited hydrogen atom in parallel electric and magnetic fields.
J. Phys. B 40, 1925 (2007)

hν + H	Photoionization		Th
hν + $\mathbf{H^*}$	Photoionization		Th

726. A. Yu. Elizarov, I. I. Tupitsyn
Photoionization and electron-impact ionization of Yb atoms from an excited aligned state.
J. Phys. B 40, 1991 (2007)

hν + Yb	Photoionization	3.8−2,000 eV	E/T
e + $\mathbf{Yb^*}$	Photoionization	3.8−2,000 eV	E/T

727. A.C.P. Bitencourt, F. V. Prudente, J.D.M. Vianna
Diabatic potential-optimized discrete variable representation: Application to phtodissociation process of the CO molecule.
J. Phys. B 40, 2075 (2007)

hν + CO	Photodissociation	6,700−20,500 cm^{-1}	Th

728. Y. Hikosaka, T. Gejo, T. Tamura, K. Honma, Y. Tamenori, E. Shigemasa
Core-valence multiply excited states in N_2 probed by detecting metastable fragments.
J. Phys. B 40, 2091 (2007)

hν + N_2	Photodissociation	405−430 eV	Exp
hν + N_2	Photoexcitation	405−430 eV	Exp

729. A. S. Bennal, N. M. Badiger
Measurement of K shell absorption and fluorescence parameters for the elements Mo, Ag, Cd, In and Sn using a weak gamma source.
J. Phys. B 40, 2189 (2007)

hν + Mo	Total Absorption, Scattering	123.6 keV	E/T
hν + Ag	Total Absorption, Scattering	123.6 keV	E/T
hν + Cd	Total Absorption, Scattering	123.6 keV	E/T
hν + In	Total Absorption, Scattering	123.6 keV	E/T
hν + Sn	Total Absorption, Scattering	123.6 keV	E/T
hν + Mo	Fluorescence	123.6 keV	E/T
hν + Ag	Fluorescence	123.6 keV	E/T
hν + Cd	Fluorescence	123.6 keV	E/T
hν + In	Fluorescence	123.6 keV	E/T
hν + Sn	Fluorescence	123.6 keV	E/T

730. A. Calo, E. Kukk, M. Huttula, E. Nommiste, V. Kisand, S. Osmekhin, H. Aksela, S. Aksela
VUV excitation and electronic decay of rubidium halide molecules.
J. Phys. B 40, 2261 (2007)

hν + RbF	Photoexcitation	14−21 eV	Exp
hν + RbCl	Photoexcitation	14−21 eV	Exp
hν + RbBr	Photoexcitation	14−21 eV	Exp
hν + RbI	Photoexcitation	14−21 eV	Exp

731. M. Rafiq, S. Hussain, M. Saleem, M. A. Kalyar, M. A. Baig
Measurement of photoionization cross section from the 3s3p $^1P_1$ excited state of magnesium.
J. Phys. B 40, 2291 (2007)

hν + Mg	Photoionization	3.3−4.7 eV	Exp
hν + Mg^*	Photoionization	3.3−4.7 eV	Exp

732. M. A. Kalyar, M. Rafiq, Sami-ul-Haq, M. A. Baig
Absolute photoionization cross section from the 6s6p $^{1,3}P_1$ excited states of barium.
J. Phys. B 40, 2307 (2007)

hν + Ba	Photoionization	404−388 nm	Exp
hν + Ba^*	Photoionization	404−388 nm	Exp

733. R. Wehlitz, D. Lukic, P. N. Juranic
Observation of a new $3s^2$ -¿ 3pnd double-excitation Rydberg series in ground-state magnesium.
J. Phys. B 40, 2385 (2007)

hν + Mg	Photoionization	7−12 eV	Exp

734. P. Jonsson, M. Andersson
Spectral properties of In II from MCDHF calculations.
J. Phys. B 40, 2417 (2007)

hν + In^+	Photoexcitation	0−135,000 cm^{-1}	Th

735. J. Fernandez, F. Martin
Photoionization of the HeH^+ molecular ion.
J. Phys. B 40, 2471 (2007)

hν + HeH$^+$	Photoionization	40−80 eV	Th

736. M. Yamazaki, J-i. Adachi, T. Teramoto, A. Yagishita
Experimental evidence of interatomic resonant Auger electron emission from fixed-in-space NO molecules.
J. Phys. B 40, F207 (2007)

hν + NO	Photoionization	400−560 eV	Exp

737. T. Jahnke, A. Czasch, M. Schoeffler, S. Schoessler, M. Kaesz, J. Titze, K. Kreidi, R. E. Grisenti, A. Staudte, O. Jagutzki, L.Ph.H. Schmidt, S. K. Semenov, N. A. Cherepkov, H. Schmidt-Boecking, R. Doerner
Photoelectron and ICD electron angular distributions from fixed-in-space neon dimers.
J. Phys. B 40, 2597 (2007)

hν + Ne$_2$	Photodissociation	49.3−420 eV	Exp
hν + Ne$_2$	Photoionization	49.3−420 eV	Exp

738. J. McKenna, M. Suresh, D. S. Murphy, W. A. Bryan, L.-Y. Peng, S. L. Stebbings, E.M.L. English, J. Wood, B. Srigengan, I.C.E. Turcu, J. L. Collier, J. F. McCann, W. R. Newell, I. D. Williams
Intense-field dissociation dynamics of $D_2{}^+$ molecular ions using ultrafast laser pulses.
J. Phys. B 40, 2607 (2007)

hν + H$_2{}^+$	Photodissociation	790 nm	Exp
hν + D$_2{}^+$	Photodissociation	790 nm	Exp

739. H. Yoshii, Y. Morioka, T. Hayaishi
Satellite structures of Kr and Xe studied by high-resolution threshold photoelectron spectroscopy.
J. Phys. B 40, 2765 (2007)

hν + Kr	Photoionization	24−40 eV	Exp
hν + Xe	Photoionization	24−40 eV	Exp

740. T. Suzuki, Y. Yamauchi
Current enhancement of a He^+ ion beam by optical pumping.
J. Phys. B 40, 2817 (2007)

hν + He	Photoionization	1083 nm	Exp

741. M. C. Witthoeft, A. D. Whiteford, N. R. Badnell
R-matrix electron-impact excitation calculations along the F-like iso-electronic sequence.
J. Phys. B 40, 2969 (2007)

hν + Mg^{3+}	Photoexcitation	10^3-10^9 K	Th
hν + Al^{4+}	Photoexcitation	10^3-10^9 K	Th
hν + Si^{5+}	Photoexcitation	10^3-10^9 K	Th
hν + P^{6+}	Photoexcitation	10^3-10^9 K	Th
hν + S^{7+}	Photoexcitation	10^3-10^9 K	Th
hν + Cl^{8+}	Photoexcitation	10^3-10^9 K	Th

hν + Ar^{9+}	Photoexcitation	10^3-10^9 K	Th
hν + K^{10+}	Photoexcitation	10^3-10^9 K	Th
hν + Ca^{11+}	Photoexcitation	10^3-10^9 K	Th
hν + Sc^{12+}	Photoexcitation	10^3-10^9 K	Th
hν + Ti^{13+}	Photoexcitation	10^3-10^9 K	Th
hν + V^{14+}	Photoexcitation	10^3-10^9 K	Th
hν + Cr^{15+}	Photoexcitation	10^3-10^9 K	Th
hν + Mn^{16+}	Photoexcitation	10^3-10^9 K	Th
hν + Fe^{17+}	Photoexcitation	10^3-10^9 K	Th
hν + Co^{18+}	Photoexcitation	10^3-10^9 K	Th
hν + Ni^{19+}	Photoexcitation	10^3-10^9 K	Th

742. A. Costescu, S. Spanulescu, C. Stoica
The second-order S-matrix element for the elastic scattering of photons by K-shell bound electrons: The nonrelativistic limit.
J. Phys. B 40, 2995 (2007)

hν + Zn	Total Absorption, Scattering	5−200 keV	Th
hν + Ag	Total Absorption, Scattering	5−200 keV	Th
hν + Pb	Total Absorption, Scattering	5−200 keV	Th
hν + Al	Photoionization	5−200 keV	Th
hν + Zn	Photoionization	5−200 keV	Th
hν + Ag	Photoionization	5−200 keV	Th
hν + Ba	Photoionization	5−200 keV	Th
hν + Pb	Photoionization	5−200 keV	Th
hν + U	Photoionization	5−200 keV	Th

743. E. A. Pronin, N. L. Manakov, S. I. Marmo, A. F. Starace
Polarization control of direct (non-sequential) two-photon double ionization of He.
J. Phys. B 40, 3115 (2007)

hν + He	Photoionization	41−48 eV	Th

744. H. S. Nataraj, B. K. Sahoo, B. P. Das, R. K. Chaudhuri, D. Mukherjee
Theoretical studies of the atomic transitions in boron-like ions: Mg VIII, Si X and S XII.
J. Phys. B 40, 3153 (2007)

hν + Mg^{7+}	Photoexcitation	2×10^6-1×10^3 cm^{-1}	Th
hν + Si^{9+}	Photoexcitation	2×10^6-1×10^3 cm^{-1}	Th
hν + S^{11+}	Photoexcitation	2×10^6-1×10^3 cm^{-1}	Th

745. L. J. Curtis
Determination of lifetimes and nonadiabatic correlations from measured dipole polarizabilities.
J. Phys. B 40, 3173 (2007)

hν + Kr^{6+}	Photoexcitation		Th

746. M. Rafiq, M. A. Kalyar, M. A. Baig
Multi-photon excitation spectra of the $3sn\ell$ ($\ell = 0$, 1, 2 and 3) Rydberg states of magnesium.
J. Phys. B 40, 3181 (2007)

hν + Mg	Photoexcitation	15,000−62,000 cm^{-1}	Exp

747. T. Teramoto, J. Adachi, K. Hosaka, M. Yamazaki, K. Yamanouchi, N. A. Cherepkov, M. Stener, P. Decleva, A. Yagishita
New approach for a complete experiment: C1s photoionization in CO_2 molecules.
J. Phys. B 40, F241 (2007)

hν + CO_2	Photoionization	301−322 eV	Exp

748. K. Jankala, S. Fritzsche, M. Huttula, J. Schulz, S. Urpelainen, S. Heinasmaki, S. Aksela, H. Aksela
Many-electron effects in 2p photoionization and Auger decay of atomic aluminum.
J. Phys. B 40, 3435 (2007)

hν + Al	Photoionization	98−115 eV	E/T

749. G. Turri, B. Lohmann, B. Langer, G. Snell, U. Becker, N. Berrah
Spin polarization of the Ar* $2p_{1/2}{}^{-1}$ and $2p_{1/2}{}^{-1}$ 3d resonant Auger decay.
J. Phys. B 40, 3453 (2007)

hν + Ar	Photoexcitation	246−249 eV	Exp
hν + Ar	Photoionization	246−249 eV	Exp

750. S. B. Whitfield, J. Kane, R. Wehlitz
Xe 5s angular distributions in the region of the second Cooper minimum.
J. Phys. B 40, 3647 (2007)

hν + Xe	Photoionization	80−300 eV	Exp

751. E. Kukk, G. Pruemper, R. Sankari, M. Hoshino, C. Makochekanwa, M. Kitajima, H. Tanaka, H. Yoshida, Y. Tamenori, E. Rachlew, K. Ueda
Electronic state dependence in the dissociation of core-ionized methane.
J. Phys. B 40, 3677 (2007)

hν + CH_4	Photodissociation	220−260 eV	Exp
hν + CD_4	Photodissociation	220−260 eV	Exp
hν + CH_4	Photoionization	220−260 eV	Exp
hν + CD_4	Photoionization	220−260 eV	Exp

752. V. Manjunathaguru, T. K. Umesh
Total interaction cross sections and effective atomic numbers of some biologically important compounds containing H, C, N and O in the energy range 6.4-136 keV.
J. Phys. B 40, 3707 (2007)

hν + Li	Photon Collisions	6.4−136 keV	Exp
hν + C	Photon Collisions	6.4−136 keV	Exp
hν + O	Photon Collisions	6.4−136 keV	Exp
hν + Al	Photon Collisions	6.4−136 keV	Exp
hν + Ca	Photon Collisions	6.4−136 keV	Exp
hν + LiOH	Photon Collisions	6.4−136 keV	Exp
hν + $CaCO_3$	Photon Collisions	6.4−136 keV	Exp
hν + $NaNO_3$	Photon Collisions	6.4−136 keV	Exp
hν + $NaNO_2$	Photon Collisions	6.4−136 keV	Exp
hν + $C_5H_{10}O_5$	Photon Collisions	6.4−136 keV	Exp
hν + $C_6H_{12}O_6$	Photon Collisions	6.4−136 keV	Exp
hν + $C_6H_{12}O_5H_2O$	Photon Collisions	6.4−136 keV	Exp
hν + $C_{12}H_{22}O_{11}$	Photon Collisions	6.4−136 keV	Exp
hν + $C_{18}H_{32}O_{16}H_2O$	Photon Collisions	6.4−136 keV	Exp

hν + $C_{18}H_{32}O_{165}H_2O$	Photon Collisions	6.4−136 keV	Exp
hν + $C_2H_5NO_2$	Photon Collisions	6.4−136 keV	Exp
hν + $C_3H_7NO_2$	Photon Collisions	6.4−136 keV	Exp
hν + $C_3H_7NO_3$	Photon Collisions	6.4−136 keV	Exp
hν + $C_5H_{11}NO_2$	Photon Collisions	6.4−136 keV	Exp
hν + $C_4H_9NO_3$	Photon Collisions	6.4−136 keV	Exp
hν + $C_6H_{13}NO_2$	Photon Collisions	6.4−136 keV	Exp
hν + $C_4H_7NO_4$	Photon Collisions	6.4−136 keV	Exp
hν + $C_6H_{14}N_2O_2$	Photon Collisions	6.4−136 keV	Exp
hν + $C_5H_9NO_4$	Photon Collisions	6.4−136 keV	Exp
hν + $C_6H_9N_3O_2$	Photon Collisions	6.4−136 keV	Exp
hν + $C_9H_{11}NO_2$	Photon Collisions	6.4−136 keV	Exp
hν + $C_6H_{14}N_4O_2$	Photon Collisions	6.4−136 keV	Exp
hν + $C_9H_{11}NO_3$	Photon Collisions	6.4−136 keV	Exp
hν + $C_{11}H_{12}N_2O_2$	Photon Collisions	6.4−136 keV	Exp
hν + $C_6H_{12}N_2O_4S_2$	Photon Collisions	6.4−136 keV	Exp

753. M. Guehr, B. K. McFarland, J. P. Farrell, P. H. Bucksbaum
High harmonic generation for N_2 and CO_2 beyond the two-point model.
J. Phys. B 40, 3745 (2007)

hν + CO_2	Photoionization	0−180 eV	Th
hν + N_2	Photoionization	0−180 eV	Th

754. L. Partanen, M. Huttula, H. Aksela, S. Aksela
The $M_{4,5}N-NNN$ Auger transitions in Kr.
J. Phys. B 40, 3795 (2007)

hν + Kr	Photoionization	104−280 eV	E/T

755. D.-S. Kim, Y. S. Kim
Characteristics of photoionization in the XUV domain for the excited $1s^22s2p^{1,3}P^0$ states of the Be-like C^{2+} ion.
J. Phys. B 40, 3807 (2007)

hν + C^{2+}	Photoionization	15−35 nm	Th
hν + C^{2+*}	Photoionization	15−35 nm	Th

756. J-i. Adachi, K. Hosaka, T. Teramoto, M. Yamazaki, N. Watanabe, M. Takahashi, A. Yagishita
Photoelectron-photoion-photoion momentum spectroscopy as a direct probe of the core-hole localization in C 1s photoionization of C_2H_2.
J. Phys. B 40, F285 (2007)

hν + C_2H_2	Photodissociation	311 eV	Exp
hν + C_2H_2	Photoionization	311 eV	Exp

757. H. Farrokhpour, M. Alagia, L. Avaldi, M. Bamdad, M. Coreno, P. Decleva, M. de Simone, R. Richter, S. Stranges, M. Tabrizchi, D. Toffoli
Spin-orbit-activated interchannel coupling in the 3d photoionization of barium atoms.
J. Phys. B 40, 4005 (2007)

hν + Ba	Photoionization	790−850 eV	Exp

758. T. Teramoto, J. Adachi, M. Yamazaki, K. Yamanouchi, M. Stener, P. Decleva, A. Yagishita
Extensive study on the C 1s photoionization of CS_2 molecules by multi-coincidence velocity-map imaging spectroscopy.
J. Phys. B 40, 4033 (2007)

hν + CS_2	Photoionization	295−330 eV	E/T

759. T. Kaneyasu, Y. Hikosaka, E. Shigemasa, F. Penent, P. Lablanquie, T. Aoto, K. Ito
Autoionization of the Ne^+ Rydberg states formed via valence photoemission.
J. Phys. B 40, 4047 (2007)

hν + Ne	Photoionization		Exp

760. P. Andersson, A. O. Lindahl, C. Alfredsson, L. Rogstroem, C. Diehl, D. J. Pegg, D. Hanstorp
The electron affinity of phosphorus.
J. Phys. B 40, 4097 (2007)

hν + P^-	Photodetachment	745 MeV	Exp

761. J. Migdalek, A. Glowacz-Proszkiewicz
'Dirac-Fock + core-polarization' calculations of E1 transitions in the francium isoelectronic sequence.
J. Phys. B 40, 4143 (2007)

hν + Fr	Photoexcitation	10^{-5}-10^{0} a.u.	Th
hν + Ra^+	Photoexcitation	10^{-5}-10^{0} a.u.	Th
hν + Ac^{2+}	Photoexcitation	10^{-5}-10^{0} a.u.	Th
hν + Th^{3+}	Photoexcitation	10^{-5}-10^{0} a.u.	Th
hν + Pa^{4+}	Photoexcitation	10^{-5}-10^{0} a.u.	Th
hν + U^{5+}	Photoexcitation	10^{-5}-10^{0} a.u.	Th

762. M. G. Girju, K. Hristov, O. Kidun, D. Bauer
Nonperturbative resonant strong field ionization of atomic hydrogen.
J. Phys. B 40, 4165 (2007)

hν + H	Photoionization	0.25−0.5 a.u.	Th

763. A. S. Kheifets
Sequential two-photon double ionization of noble gas atoms.
J. Phys. B 40, F313 (2007)

hν + Ne	Photoionization	30−200 eV	Th
hν + Ar	Photoionization	30−200 eV	Th
2hν + Ne	Photoionization	30−200 eV	Th
2hν + Ar	Photoionization	30−200 eV	Th

764. D. Dimitrovski, J. R. Goetz, J. S. Briggs
Ionization and recombination of many-electron atoms and ions in strong, short laser pulses.
J. Phys. B 40, 4355 (2007)

hν + H^-	Photoionization		Th
hν + He	Photoionization		Th

765. A. M. Sayler, P. Q. Wang, K. D. Carnes, I. Ben-Itzhak
Determining intensity dependence of ultrashort laser processes through focus z-scanning intensity-difference spectra: Application to laser-induced dissociation of $H_2{}^+$.
J. Phys. B 40, 4367 (2007)

hν + $H_2{}^+$	Photodissociation	1.3×10^{15} W/cm^2	Exp

766. J. Colgan, M. Foster, M. S. Pindzola, F. Robicheaux
The evolution of the triple differential cross sections for the double photoionization of He and H_2.
J. Phys. B 40, 4391 (2007)

hν + He	Photoionization	76−99 eV	Th
hν + H_2	Photoionization	76−99 eV	Th

767. T. Kessler, K. Brueck, C. Baktash, J. R. Beene, Ch. Geppert, C. C. Havener, H. F. Krause, Y. Liu, D. R. Schultz, D. W. Stracener, C. R. Vane, K. Wendt
Three-step resonant photoionization spectroscopy of Ni and Ge: Ionization potential and odd-parity Rydberg levels.
J. Phys. B 40, 4413 (2007)

hν + Ni	Photoionization	205−49,314 cm^{-1}	Exp
hν + Ge	Photoionization	205−49,314 cm^{-1}	Exp

768. M. H. Stockett, E. A. Den Hartog, J. E. Lawler
Radiative lifetimes for 80 levels of singly ionized erbium.
J. Phys. B 40, 4529 (2007)

hν + Er^+	Photoexcitation	23,240−46,757 cm^{-1}	E/T

769. D. A. Shaw, D.M.P. Holland
A study of vibronic coupling in neutral and ionic states of carbon disulphide.
J. Phys. B 40, 4637 (2007)

hν + CS_2^+	Photoexcitation	275−292 eV	Exp
hν + CS_2	Photoionization	275−292 eV	Exp

770. S. Fritzsche, J. Nikkinen, S.-M. Huttula, H. Aksela, M. Huttula, S. Aksela
Interferences in the $3p^4nl$ satellite emission following the excitation of argon across the $2p_{1/2}{}^5 4s$ and $2p_{3/2}{}^5 3d$ J = 1 resonances.
Phys. Rev. A 75, 012501 (2007)

hν + Ar	Photoexcitation	247 eV	E/T
hν + Ar	Photoionization	247 eV	E/T

771. F. Yoshida, F. Koike, S. Obara, Y. Azuma, T. Nagata, S. Hasegawa
1s(2s2p $^1P)^2Pnl$, 1s(2s3s $^{3,1}S)^2Snp$, and 1s(2s3p $^1P)^2Pns$ K-shell photoexcited Rydberg series of beryllium atoms.
Phys. Rev. A 75, 012714 (2007)

hν + Be	Photoexcitation	128−140 eV	E/T
hν + Be	Photoionization	128−140 eV	E/T

772. A. Hopersky, A. Nadolinsky, V. Yavna
Resonant inelastic scattering of an x-ray photon by the argon atom near K and KM_{23} ionization thresholds.
Phys. Rev. A 75, 012719 (2007)

hν + Ar	Photon Collisions	3175−3250 eV	Th
hν + Ar	Elastic Scattering	3175−3250 eV	Th

773. A. Palacios, H. Bachau, F. Martin
Excitation and ionization of molecular hydrogen by ultrashort vuv laser pulses.
Phys. Rev. A 75, 013408 (2007)

hν + H_2	Photodissociation	2.7−13.6 eV	Th
nhν + H_2	Photodissociation	2.7−13.6 eV	Th
hν + H_2	Elastic Scattering	2.7−13.6 eV	Th
nhν + H_2	Elastic Scattering	2.7−13.6 eV	Th
hν + H_2	Photoionization	2.7−13.6 eV	Th
nhν + H_2	Photoionization	2.7−13.6 eV	Th

774. A. Kivimaki, M. de Simone, M. Coreno, V. Feyer, E. Melero Garcia, J. Alvarez Ruiz, R. Richter, K. C. Prince
Observation of core-hole double excitations in water using fluorescence spectroscopy.
Phys. Rev. A 75, 014503 (2007)

hν + H_2O	Total Absorption, Scattering	540−570 eV	Exp
hν + H_2O	Fluorescence	540−570 eV	Exp
hν + H_2O	Photoexcitation	540−570 eV	Exp
hν + H_2O	Photoionization	540−570 eV	Exp

775. S. Hussain, M. Saleem, M. A. Baig
Measurement of oscillator strength distribution in the discrete and continuous spectrum of lithium.
Phys. Rev. A 75, 022710 (2007)

hν + Li	Photoexcitation		Exp

776. A. M. Covington, S. S. Duvvuri, E. D. Emmons, R. G. Kraus, W. W. Williams, J. S. Thompson, D. Calabrese, D. L. Carpenter, R. D. Collier, T. J. Kvale, V. T. Davis
Measurements of partial cross sections and photoelectron angular distributions for the photodetachment of Fe^- and Cu^- at visible photon wavelengths.
Phys. Rev. A 75, 022711 (2007)

hν + Fe^-	Photodetachment	1.92−2.71 eV	Exp
hν + Cu^-	Photodetachment	1.92−2.71 eV	Exp

777. A. S. Kheifets, A. I. Ivanov, I. Bray
Different escape modes in two-photon double ionization of helium.
Phys. Rev. A 75, 024702 (2007)

hν + He	Photoionization		Th

778. D. Rolles, H. Zhang, Z. D. Pesic, R. C. Bilodeau, A. Wills, E. Kukk, B. S. Rude, G. D. Ackerman, J. D. Bozek, R. Diez Muino, F. J. Garcia de Abajo, N. Berrah
Size effects in angle-resolved photoelectron spectroscopy of free rare-gas clusters.
Phys. Rev. A 75, 031201 (2007)

hν + Xe	Photoionization	10−170 eV	Exp

779. N. Murphy, A. Cummings, P. Dunne, G. O'Sullivan
Vanishing resonances and excited populations: The 4d photoabsorption spectrum of Xe-like La^{3+} and I-like La^{4+}.
Phys. Rev. A 75, 032509 (2007)

hν + La^{3+}	Total Absorption, Scattering	70−130 eV	Exp
hν + La^{4+}	Total Absorption, Scattering	70−130 eV	Exp

780. T. Rander, J. Schulz, M. Huttula, A. Maekinen, M. Tchaplyguine, S. Svensson, G. Oehrwall, O. Bjoerneholm, S. Aksela, H. Aksela
Core-level electron spectroscopy on the sodium dimer Na 2p level.
Phys. Rev. A 75, 032510 (2007)

hν + Na_2	Photodissociation	61 eV	Exp
hν + Na	Photoionization	61 eV	Exp
hν + Na_2	Photoionization	61 eV	Exp

781. R. Beuc, M. Movre, V. Horvatic, C. Vadla, O. Dulieu, M. Aymar
Absorption spectroscopy of the rubidium dimer in an overheated vapor: An accurate check of molecular structure and dynamics.
Phys. Rev. A 75, 032512 (2007)

hν + Rb_2	Total Absorption, Scattering	600−1100 nm	E/T

782. L.-F. Zhu, H. Yuan, W.-C. Jiang, F.-X. Zhang, Z.-S. Yuan, H.-D. Cheng, K.-Z. Xu
Generalized oscillator strengths for some higher valence-shell excitations of argon.
Phys. Rev. A 75, 032701 (2007)

hν + Ar	Photoexcitation	10^{-2}-10 a.u.	Th

783. M. D. de Jonge, C. Q. Tran, C. T. Chantler, Z. Barnea, B. B. Dhal, D. Paterson, E. P. Kanter, S. H. Southworth, L. Young, M. A. Beno, J. A. Linton, G. Jennings
Measurement of the x-ray mass attenuation coefficient and determinatin of the imaginary component of the atomic form factor of tin over the energy range of 29-60 keV.
Phys. Rev. A 75, 032702 (2007)

hν + Sn	Total Absorption, Scattering	25−60 keV	Exp

784. S. K. Semenov, V. V. Kuznetsov, N. A. Cherepkov, P. Bolognesi, V. Feyer, A. Lahmam-Bennani, M. E. Staicu Casagrande, L. Avaldi
Angular distributions of molecular Auger electrons: The case of C 1s Auger emission in CO.
Phys. Rev. A 75, 032707 (2007)

hν + CO	Photoionization		E/T

785. D. Kilbane, F. Folkmann, J.-M. Bizau, C. Banahan, S. Scully, H. Kjeldsen, P. van Kampen, M.W.D. Mansfield, J. T. Costello, J. B. West
Absolute photoionization cross-section measurements of the Kr I isoelectronic sequence.
Phys. Rev. A 75, 032711 (2007)

hν + Rb^+	Photoionization	24−160 eV	Exp
hν + Sr^{2+}	Photoionization	24−160 eV	Exp

786. M. Bottcher, H. Rottke, N. Zhavoronkov, W. Sandner, P. Agostini, M. Gisselbrecht, A. Huetz
Routes to multiphoton double ionization in combined extreme ultraviolet and infrared laser pulses.
Phys. Rev. A 75, 033408 (2007)

hν + Xe	Photoionization	20−30 eV	Exp

787. I. A. Ivanov, A. S. Kheifets
Two-photon double ionization of helium in the region of photon energies 42-50 eV.
Phys. Rev. A 75, 033411 (2007)

hν + He	Photoionization	42−50 eV	Th

788. C. Buth, R. Santra
Theory of x-ray absorption by laser-dressed atoms.
Phys. Rev. A 75, 033412 (2007)

hν + Kr	Total Absorption, Scattering	14−17 keV	Th
hν + Kr	Photoionization	14−17 keV	Th

789. S. Minemoto, H. Sakai
Anomalous angular distribution of fragment ions from rare-gas diatomic molecules with intense, femtosecond, near-infrared laser pulses.
Phys. Rev. A 75, 033413 (2007)

hν + Xe_2	Photodissociation	800 nm	Exp
hν + I_2	Photodissociation	800 nm	Exp
hν + Xe_2	Photoionization	800 nm	Exp
hν + I_2	Photoionization	800 nm	Exp

790. S. Selsto, A. Palacios, J. Fernandez, F. Martin
Electron angular distribution in resonance-enhanced two-photon ionization of $H_2{}^+$ by ultrashort laser pulses.
Phys. Rev. A 75, 033419 (2007)

hν + $H_2{}^+$	Photodissociation	0.7−0.8 a.u.	Th
hν + $H_2{}^+$	Photoionization	0.7−0.8 a.u.	Th

791. X. Wang, H. Qiao
Full-core-plus-correlation method in cyclindrical coordinates: Lithium atom in strong magnetic fields.
Phys. Rev. A 75, 033421 (2007)

hν + Li	Photoexcitation		Th

792. G. Lagmago Kamta, A. D. Bandrauk
Effects of molecular symmetry on enhanced ionization by intense laser pulses.
Phys. Rev. A 75, 041401 (2007)

hν + $H_2{}^+$	Photoionization	5×10^{13} W/cm^2	Th

793. O. Docenko, M. Tamanis, R. Ferber, E. A. Pazyuk, A. Zaitsevskii, A. V. Stolyarov, A. Pashov, H. Knoeckel, E. Tiemann
Deperturbation treatment of the A $^1\Sigma^+ - b\ ^3\Pi$ complex of NaRb and prospects for ultracold molecule formation in X $^1\Sigma^+(\upsilon = 0; J = 0)$.
Phys. Rev. A 75, 042503 (2007)

hν + NaRb	Fluorescence	770−477 nm	E/T

794. P. Staanum, A. Pashov, H. Knoeckel, E. Tiemann
X $^1\Sigma^+$ and a $^3\Sigma^+$ states of LiCs studied by Fourier-transform spectroscopy.
Phys. Rev. A 75, 042513 (2007)

hν + LiCs	Fluorescence	15.53−17.24$\times 10^3$ cm^{-1}	E/T

795. A. Emmanouilidou
Double-energy-differential cross sections for the Coulomb four-body problem in a quasiclassical framework.
Phys. Rev. A 75, 042702 (2007)

hν + Li	Photoionization	207−318 eV	Th

796. A. S. Kheifets, I. Bray
Valence-shell double photoionization of alkaline-earth-metal atoms.
Phys. Rev. A 75, 042703 (2007)

hν + **Be**	Photoionization	18−48 eV	Th
hν + **Mg**	Photoionization	18−48 eV	Th
hν + **Ca**	Photoionization	18−48 eV	Th

797. Y. Hikosaka, T. Kaneyasu, E. Shigemasa, Y. Tamenori, N. Kosugi
Autoionization dynamics of core-valence doubly excited states in N_2.
Phys. Rev. A 75, 042708 (2007)

hν + $\mathbf{N_2}$	Photoionization	412.5−433.5 eV	Exp

798. J. Fernandez, F. Martin
Dissociative and nondissociative photoionization of H_2 from the E,$F^1\Sigma_g{}^+$ excited state.
Phys. Rev. A 75, 042712 (2007)

hν + $\mathbf{H_2}^*$	Photodissociation	3−14 eV	Th
hν + $\mathbf{H_2}$	Photoionization	3−14 eV	Th
hν + $\mathbf{H_2}^*$	Photoionization	3−14 eV	Th

799. G. Aravind, A. K. Gupta, M. Krishnamurthy, E. Krishnakumar
Spectral dependence of the asymmetry parameter in the photodetachment from As^-.
Phys. Rev. A 75, 042714 (2007)

hν + $\mathbf{As}^-$	Photodetachment	715−532 nm	Exp

800. F. L. Yip, D. A. Horner, C. W. McCurdy, T. N. Rescigno
Single and triple differential cross sections for double photoionization of H^-.
Phys. Rev. A 75, 042715 (2007)

hν + $\mathbf{H}^-$	Photoionization	14.3−50 eV	Th

801. M. Ya. Amusia, A. S. Baltenkov, L. V. Chernysheva
Photoionization of Xe 3d electrons in molecule Xe@C_{60}: Interplay of intradoublet and confinement resonances.
Phys. Rev. A 75, 043201 (2007)

hν + **Xe**	Photoionization	49.5−58 eV	Th
hν + **Xe** + $\mathbf{C_{60}}$	Photoionization	49.5−58 eV	Th

802. J. Wu, H. Zeng, C. Guo
Polarization effects on nonsequential double ionization of molecular fragments in strong laser fields.
Phys. Rev. A 75, 043402 (2007)

hν + $\mathbf{N_2}$	Photoionization	0.7−4×10^{14} W/cm^2	Exp
hν + $\mathbf{O_2}$	Photoionization	0.7−4×10^{14} W/cm^2	Exp

803. J. Zhang, T. Nakajima
Coulomb effects in photoionization of H atoms irradiated by intense laser fields.
Phys. Rev. A 75, 043403 (2007)

hν + **H**	Photoionization	10^{13}-10^{16} W/cm^2	Th

804. C. Wu, Z. Wu, Q. Liang, M. Liu, Y. Deng, Q. Gong
Ionization and dissociation of alkanes in few-cycle laser fields.
Phys. Rev. A 75, 043408 (2007)

hν + $\mathbf{CH_4}$	Photodissociation	1.4×10^{14} W/cm^2	Exp
hν + $\mathbf{C_2H_6}$	Photodissociation	1.4×10^{14} W/cm^2	Exp
hν + $\mathbf{C_3H_8}$	Photodissociation	1.4×10^{14} W/cm^2	Exp
hν + $\mathbf{CH_4}$	Photoionization	1.4×10^{14} W/cm^2	Exp
hν + $\mathbf{C_2H_6}$	Photoionization	1.4×10^{14} W/cm^2	Exp
hν + $\mathbf{C_3H_8}$	Photoionization	1.4×10^{14} W/cm^2	Exp

805. A. A. Sorokin, M. Wellhoefer, S. V. Bobashev, K. Tiedtke, M. Richter
X-ray-laser interaction with matter and the role of multiphoton ionization: Free-electron-laser studies on neon and helium.
Phys. Rev. A 75, 051402 (2007)

hν + **He**	Photoionization	38.4−42.8 eV	Exp
hν + **Ne**	Photoionization	38.4−42.8 eV	Exp
hν + $\mathbf{Ne^+}$	Photoionization	38.4−42.8 eV	Exp
hν + $\mathbf{Ne^{2+}}$	Photoionization	38.4−42.8 eV	Exp

806. M. Nagasono, E. Suljoti, A. Pietzsch, F. Hennies, M. Wellhoefer, H.-T. Hoeft, M. Martins, W. Wurth, R. Treusch, J. Feldhaus, J. R. Schneider, A. Foehlisch
Resonant two-photon absorption of extreme-ultraviolet free-electron-laser radiation in helium.
Phys. Rev. A 75, 051406 (2007)

hν + **He**	Photoionization	38.5 eV	Exp

807. I. I. Beterov, D. B. Tretyakov, I. I. Ryabtsev, A. Ekers, N. N. Bezuglov
Ionization of sodium and rubidium nS, nP, and nD Rydberg atoms by blackbody radiation.
Phys. Rev. A 75, 052720 (2007)

hν + **Na**	Photoionization	77−600 K	E/T
hν + $\mathbf{Na^*}$	Photoionization	77−600 K	E/T
hν + **Rb**	Photoionization	77−600 K	E/T
hν + $\mathbf{Rb^*}$	Photoionization	77−600 K	E/T

808. H. J. Woerner, S. Mollet, Ch. Jungen, F. Merkt
Role of spins in molecular photoionization: Spectroscopy and dynamics of autoionizing Rydberg states of $ortho - H_2$**.**
Phys. Rev. A 75, 062511 (2007)

hν + $\mathbf{H_2}$	Photoionization	11,442−11,456 cm^{-1}	E/T

809. I. A. Ivanov, A. S. Kheifets
Single-photon double ionization of negative hydrogen ions in the presence of a dc electric field.
Phys. Rev. A 75, 062701 (2007)

hν + $\mathbf{H^-}$	Photoionization	15−30 eV	Th

810. M. Foster, J. Colgan, O. Al-Hagan, J. L. Peacher, D. H. Madison, M. S. Pindzola
Angular distributions from photoionization of $H_2{}^+$**.**
Phys. Rev. A 75, 062707 (2007)

e + $\mathbf{H_2{}^+}$	Photoionization	10 eV	Th

811. J. C. Wang, M. Lu, D. Esteves, M. Habibi, G. Alna'washi, R. A. Phaneuf, A.L.D. Kilcoyne
Photoionization and electron-impact ionization of Ar^{5+}.
Phys. Rev. A 75, 062712 (2007)

hν + Ar^{5+}	Photoionization	50−350 eV	Exp

812. S. Kawai, A. D. Bandrauk
Phase determination of harmonics by three-color photoionization of aligned molecules: The $H_2{}^+$ system.
Phys. Rev. A 75, 063402 (2007)

hν + $H_2{}^+$	Photoionization	1−5 a.u.	Exp

813. L. Fang, G. N. Gibson
Investigating excited electronic states of $I_2{}^+$ and $I_2{}^{2+}$ produced by strong-field ionization using vibrational wave packets.
Phys. Rev. A 75, 063410 (2007)

hν + I_2	Photoionization	780 nm	Exp

814. M. Klaiber, K. Z. Hatsagortsyan, C. H. Keitel
Fully relativistic laser-induced ionization and recollision processes.
Phys. Rev. A 75, 063413 (2007)

hν + Be^{3+}	Photoionization	4−8 a.u.	Th

815. A. M. Sayler, P. Q. Wang, K. D. Carnes, B. D. Esry, I. Ben-Itzhak
Determining laser-induced dissociation pathways of multielectron diatomic molecules: Application to the dissociation of $O_2{}^+$ by high-intensity ultrashort pulses.
Phys. Rev. A 75, 063420 (2007)

hν + $O_2{}^+$	Photodissociation	790 nm	Exp

816. L.A.A. Nikolopoulos, T. K. Kjeldsen, L. B. Madsen
Spectral and partial-wave decomposition of time-dependent wave functions on a grid: Photoelectron spectra of H and $H_2{}^+$ in electromagnetic fields.
Phys. Rev. A 75, 063426 (2007)

hν + H	Photoionization	0−80 eV	Th
hν + $H_2{}^+$	Photoionization	0−80 eV	Th

817. T. K. Kjeldsen, L.A.A. Nikolopoulos, L. B. Madsen
Solving the m-mixing problem for the three-dimensional time-dependent Schrodinger equation by rotations: Application to strong-field ionization of $H_2{}^+$.
Phys. Rev. A 75, 063427 (2007)

hν + $H_2{}^+$	Photoionization		Th

818. R. R. Lucchese, J. Soderstrom, T. Tanaka, M. Hoshino, M. Kitajima, H. Tanaka, A. De Fanis, J.-E. Rubensson, K. Ueda
Vibrationally resolved partial cross sections and asymmetry parameters for nitrogen K-shell photoionization of the N_2O molecule.
Phys. Rev. A 76, 012506 (2007)

hν + N_2O	Photoionization	410−465 eV	E/T

819. T. Kaneyasu, Y. Hikosaka, E. Shigemasa, F. Penent, P. Lablanquie, T. Aoto, K. Ito
State-selective cross sections of multiple photoionization in Ne.
Phys. Rev. A 76, 012717 (2007)

hν + Ne	Photoionization	60−240 eV	Exp
nhν + Ne	Photoionization	60−240 eV	Exp

820. T. K. Fang, T. N. Chang
B-spline-based complex-rotation method with spin-dependent interaction.
Phys. Rev. A 76, 012721 (2007)

hν + Mg	Photoionization	106−335 nm	Th
hν + Mg*	Photoionization	106−335 nm	Th

821. S. Chelkowski, A. D. Bandrauk, A. Staudte, P. B. Corkum
Dynamic nuclear interference structures in the Coulomb explosion spectra of a hydrogen molecule in intense laser fields: Reexamination of molecular enhanced ionization.
Phys. Rev. A 76, 013405 (2007)

hν + H_2	Photodissociation	600−1200 nm	Th
hν + D_2	Photodissociation	600−1200 nm	Th
hν + H_2	Photoionization	600−1200 nm	Th
hν + D_2	Photoionization	600−1200 nm	Th

822. J. Chen, J. Fan, Y. Li, S. P. Yang
Semiclassical theory of molecular nonsequential double ionization.
Phys. Rev. A 76, 013418 (2007)

hν + H_2	Photoionization	800−1850 nm	Th
hν + D_2	Photoionization	800−1850 nm	Th
hν + N_2	Photoionization	800−1850 nm	Th

823. S. Bivona, G. Bonanno, R. Burlon, C. Leone
Interference effects in photodetachment of F^- in a strong circularly polarized laser pulse.
Phys. Rev. A 76, 021401 (2007)

hν + F^-	Photodetachment	0.03 a.u.	Th

824. J. Soderstrom, M. Agaker, R. Richter, M. Alagia, S. Stranges, J.-E. Rubensson
Oxygen K-edge x-ray-emission–threshold-electron coincidence spectrum of CO_2.
Phys. Rev. A 76, 022505 (2007)

hν + CO_2	Fluorescence	541 eV	Exp
hν + CO_2	Photoexcitation	541 eV	Exp

825. M. Alagia, M. Lavollee, R. Richter, U. Ekstrom, V. Carravetta, D. Stranges, B. Brunetti, S. Stranges
Probing the potential energy surface by high-resolution x-ray absorption spectroscopy: The umbrella motion of the core-excited CH_3 free radical.
Phys. Rev. A 76, 022509 (2007)

hν + CH_3	Total Absorption, Scattering	282 eV	E/T
hν + CH_3	Fluorescence	282 eV	E/T
hν + CH_3	Photoexcitation	282 eV	E/T

826. Y. Li, J. Chen, S. P. Yang, J. Liu
Alignment effect in nonsequential double ionization of diatomic molecules in strong laser fields.
Phys. Rev. A 76, 023401 (2007)

hν + H_2	Photodissociation	800 nm	Th
hν + N_2	Photodissociation	800 nm	Th
hν + H_2	Photoionization	800 nm	Th
hν + N_2	Photoionization	800 nm	Th

827. V. Roudnev, B. D. Esry
HD^+ in a short strong laser pulse: Practical consideration of the observability of carrier-envelope phase effects.
Phys. Rev. A 76, 023403 (2007)

hν + $H_2{}^+$	Photodissociation	750 nm	Th
hν + HD^+	Photodissociation	750 nm	Th
hν + $H_2{}^+$	Photoionization	750 nm	Th
hν + HD^+	Photoionization	750 nm	Th

828. A. S. Meijer, Y. Zhang, D. H. Parker, W. J. van der Zande, A. Gijsbertsen, M.J.J. Vrakking
Controlling rotational state distributions using two-pulse stimulated Raman excitation.
Phys. Rev. A 76, 023411 (2007)

hν + NO	Photoexcitation	2.8×10^{12} W/cm^2	E/T

829. W. A. Bryan, E.M.L. English, J. McKenna, J. Wood, C. R. Calvert, I.C.E. Turcu, R. Torres, J. L. Collier, I. D. Williams, W. R. Newell
Mapping the evolution of optically generated rotational wave packets in a room-temperature ensemble of D_2.
Phys. Rev. A 76, 023414 (2007)

hν + H_2	Photodissociation	800 nm	Exp
hν + D_2	Photodissociation	800 nm	Exp
hν + H_2	Photoexcitation	800 nm	Exp
hν + D_2	Photoexcitation	800 nm	Exp
hν + H_2	Photoionization	800 nm	Exp
hν + D_2	Photoionization	800 nm	Exp

830. J. Wu, J. Yuan
Fully relativistic R-matrix study of the interaction between a slow electron and atomic iodine: Scattering and photodetachment.
Phys. Rev. A 76, 024702 (2007)

hν + I^-	Photodetachment	0−8 eV	Th

831. A. S. Kheifets, I. A. Ivanov, I. Bray
Angular anisotropy parameters and recoil-ion momentum distribution in two-photon double ionization of helium.
Phys. Rev. A 76, 025402 (2007)

hν + He	Photoionization	45 eV	Th

832. D. A. Horner, F. Morales, T. N. Rescigno, F. Martin, C. W. McCurdy
Two-photon double ionization of helium above and below the threshold for sequential ionization.
Phys. Rev. A 76, 030701 (2007)

hν + He	Photoionization	40−55 eV	Th

833. F. Hennies, S. Polyutov, I. Minkov, A. Pietzsch, M. Nagasono, H. Agren, L. Triguero, M.-N. Piancastelli, W. Wurth, F. Gel'mukhanov, A. Foehlisch
Dynamic interpretation of resonant x-ray Raman scattering: Ethylene and benzene.
Phys. Rev. A 76, 032505 (2007)

hν + C_2H_4	Fluorescence	280−290 eV	Exp
hν + C_6H_6	Fluorescence	280−290 eV	Exp
hν + C_2H_4	Photoexcitation	280−290 eV	Exp
hν + C_6H_6	Photoexcitation	280−290 eV	Exp

834. M. Zitnik, M. Kavcic, K. Bucar, A. Mihelic, M. Stuhec, J. Kokalj, J. Szlachetko
Inelastic x-ray scattering in the vicinity of xenon L_3 edge.
Phys. Rev. A 76, 032506 (2007)

hν + Xe	Fluorescence	4090−4805 eV	Exp
hν + Xe	Photoexcitation	4090−4805 eV	Exp

835. P. Limao-Vieira, E. Vasekova, A. Giuliani, J.M.C. Lourenco, P. M. Santos, D. Duflot, S. V. Hoffmann, N. J. Mason, J. Delwiche, M.-J. Hubin-Franskin
Perfluorocyclobutane electronic state spectroscopy by high-resolution vacuum ultraviolet photoabsorption, electron impact, He I photoelectron spectroscopy, and ab initio calculations.
Phys. Rev. A 76, 032509 (2007)

hν + C_4F_8	Total Absorption, Scattering	100 eV	Exp
hν + C-C_4F_8	Total Absorption, Scattering	100 eV	Exp
hν + C_4F_8	Photoionization	100 eV	Exp
hν + C-C_4F_8	Photoionization	100 eV	Exp

836. P. Olalde-Velasco, E. Mendez-Martinez, J. Jimenez-Mier, R. Wehlitz, S. B. Whitfield
Beryllium doubly excited autoionizing resonances between the 2p and 3p thresholds.
Phys. Rev. A 76, 032701 (2007)

hν + Be	Photoionization	17−22 eV	Exp

837. V. K. Dolmatov, E. Guler, S. T. Manson
"Reading" the photoelectron $\beta - parameter$ spectrum in a resonance region.
Phys. Rev. A 76, 032704 (2007)

hν + Cr^+	Photoionization	40−41 eV	Th

838. Y. Hikosaka, P. Lablanquie, F. Penent, T. Kaneyasu, E. Shigemasa, J.H.D. Eland, T. Aoto, K. Ito
Single, double, and triple Auger decay of the Xe 4p core-hole states.
Phys. Rev. A 76, 032708 (2007)

hν + Xe	Photoionization	220.3 eV	Exp

839. I. M. Savukov
Quasicontinuum relativistic many-body perturbation theory photoionization cross sections of Na, K, Rb, and Cs.
Phys. Rev. A 76, 032710 (2007)

hν + Na	Photoionization	0−1 a.u.	Th
hν + K	Photoionization	0−1 a.u.	Th
hν + Rb	Photoionization	0−1 a.u.	Th
hν + Cs	Photoionization	0−1 a.u.	Th

840. N. Berrah, R. C. Bilodeau, I. Dumitriu, J. D. Bozek, N. D. Gibson, C. W. Walter, G. D. Ackerman, O. Zatsarinny, T. W. Gorczyca
Shape resonances in the absolute K-shell photodetachment of B^-.
Phys. Rev. A 76, 032713 (2007)

hν + B^-	Photodetachment	187−195 eV	E/T

841. L.A.A. Nikolopoulos, T. K. Kjeldsen, L. B. Madsen
Three-dimensional time-dependent Hartree-Fock approach for arbitrarily oriented molecular hydrogen in strong electromagnetic fields.
Phys. Rev. A 76, 033402 (2007)

hν + H_2	Photoionization	10−20 eV	Th

842. H. R. Reiss
Velocity-gauge theory for the treatment of strong-field photodetachment.
Phys. Rev. A 76, 033404 (2007)

hν + F^-	Photodetachment	0−20 eV	Th

843. H. A. Leth, L. B. Madsen, J. F. McCann
Strong-field approximation for Coulomb explosion of $H_2{}^+$ and $D_2{}^+$ by short intense laser pulses.
Phys. Rev. A 76, 033414 (2007)

hν + $H_2{}^+$	Photodissociation	2×10^{14}-6×10^{14} W/cm^2	Th
hν + $D_2{}^+$	Photodissociation	2×10^{14}-6×10^{14} W/cm^2	Th

844. N. Rohringer, R. Santra
X-ray nonlinear optical processes using a self-amplified spontaneous emission free-electron laser.
Phys. Rev. A 76, 033416 (2007)

hν + Ne	Photoionization	1 keV	Th

845. N. Berrah, R. C. Bilodeau, J. D. Bozek, I. Dumitriu, D. Toffoli, R. R. Lucchese
Shape resonances in K-shell photodetachment of small size-selected clusters: Experiment and theory.
Phys. Rev. A 76, 042709 (2007)

hν + $B_2{}^-$	Photodissociation	180−220 eV	E/T
hν + $B_3{}^-$	Photodissociation	180−220 eV	E/T
hν + $B_2{}^-$	Photodetachment	180−220 eV	E/T
hν + $B_3{}^-$	Photodetachment	180−220 eV	E/T

846. G. Aravind, A. K. Gupta, M. Krishnamurthy, E. Krishnakumar
Probing final-state interactions in the photodetachment from OH^-.
Phys. Rev. A 76, 042714 (2007)

hν + OH^-	Photodetachment	440−266 nm	Exp

847. Z. Chen, T. Morishita, A.-T. Le, C. D. Lin
Analysis of two-dimensional high-energy photoelectron momentum distributions in the single ionization of atoms by intense laser pulses.
Phys. Rev. A 76, 043402 (2007)

hν + H	Photoionization	5×10^{13}-5×10^{14} W/cm^2	Th

848. H. W. van der Hart, M. A. Lysaght, P. G. Burke
Time-dependent multielectron dynamics of Ar in intense short laser pulses.
Phys. Rev. A 76, 043405 (2007)

hν + Ar	Photoionization	0.25−2×10^{14} W/cm^2	Th

849. D. A. Telnov, S.-I. Chu
Ab initio study of the orientation effects in multiphoton ionization and high-order harmonic generation from the ground and excited electronic states of $H_2{}^+$.
Phys. Rev. A 76, 043412 (2007)

hν + $H_2{}^+$	Photodissociation	1−3×10^{14} W/cm^2	Th
nhν + $H_2{}^+$	Photodissociation	1−3×10^{14} W/cm^2	Th
hν + $H_2{}^+$	Photoionization	1−3×10^{14} W/cm^2	Th
nhν + $H_2{}^+$	Photoionization	1−3×10^{14} W/cm^2	Th

850. R. Patel, N.J.A. Jones, H. H. Fielding
Rotational-state-selective field ionization of molecular Rydberg states.
Phys. Rev. A 76, 043413 (2007)

hν + NO	Photoexcitation	325−330 nm	Exp
hν + NO*	Photoexcitation	325−330 nm	Exp
hν + NO	Photoionization	325−330 nm	Exp
hν + NO*	Photoionization	325−330 nm	Exp

851. A. Palacios, C. W. McCurdy, T. N. Rescigno
Extracting amplitudes for single and double ionization from a time-dependent wave packet.
Phys. Rev. A 76, 043420 (2007)

hν + H	Photoionization	13.6−40 eV	Th
2hν + H	Photoionization	13.6−40 eV	Th

852. S. H. Southworth, D. A. Arms, E. M. Dufresne, R. W. Dunford, D. L. Ederer, C. Hoehr, E. P. Kanter, B. Kraessig, E. C. Landahl, E. R. Peterson, J. Rudati, R. Santra, D. A. Walko, L. Young
K-edge x-ray-absorption spectroscopy of laser-generated Kr^+ and Kr^{2+}.
Phys. Rev. A 76, 043421 (2007)

hν + Kr^+	Fluorescence	14.36 keV	Exp
hν + Kr^{2+}	Fluorescence	14.36 keV	Exp

853. P. Balling, M. K. Raarup, U. V. Elstrom, R. Martinussen, V. V. Petrunin, T. Andersen
Doppler tuning vuv spectroscopy of D^- over an extended photon-energy range around the n=2 threshold.
Phys. Rev. A 76, 044701 (2007)

hν + D^-	Photodetachment	10.92−11.04 eV	Exp

854. C. W. Walter, N. D. Gibson, C. M. Janczak, K. A. Starr, A. P. Snedden, R. L., III Field, P. Andersson
Infrared photodetachment of Ce^-: Threshold spectroscopy and resonance structure.
Phys. Rev. A 76, 052702 (2007)

hν + Ce^-	Photodetachment	0.61−0.75 eV	E/T

855. S. J. Cavanagh, S. T. Gibson, M. N. Gale, C. J. Dedman, E. H. Roberts, B. R. Lewis
High-resolution velocity-map-imaging photoelectron spectroscopy of the O^- photodetachment fine-structure transitions.
Phys. Rev. A 76, 052708 (2007)

hν + O^-	Photodetachment	532 nm	E/T

856. F. Mota-Furtado, P. F. O'Mahony
R-matrix propagation with adiabatic bases for the photoionization spectra of atoms in magnetic fields.
Phys. Rev. A 76, 053405 (2007)

hν + Li	Photoionization	3−8 cm^{-1} above threshold	Th

857. S. L. Haan, Z. S. Smith
Classical explanation for electrons above energy $2U_p$ in strong-field double ionization at 390 nm.
Phys. Rev. A 76, 053412 (2007)

hν + He	Photoionization	390 nm	Th

858. A. Emmanouilidou
Total quadruple photoionization cross section of beryllium.
Phys. Rev. A 76, 054701 (2007)

hν + H	Photoionization	0−620 eV	Th
hν + He	Photoionization	0−620 eV	Th
hν + Li	Photoionization	0−620 eV	Th
hν + Be	Photoionization	0−620 eV	Th

859. S. L. Sorensen, M. Kitajima, T. Tanaka, M. Hoshino, H. Tanaka, Y. Tamenori, R. Sankari, M. N. Piancastelli, K. Ueda, Y. Velkov, I. Minkov, V. Carravetta, F. Gel'mukhanov
Electronic Doppler effect in resonant Auger decay of CO molecules upon excitation near a shake-up Π resonance.
Phys. Rev. A 76, 062704 (2007)

hν + CO	Total Absorption, Scattering	297−304 eV	Exp
hν + CO	Photoionization	297−304 eV	Exp

860. R. Shakeshaft
Two-photon single and double ionization of helium.
Phys. Rev. A 76, 063405 (2007)

hν + He	Photoionization	25−54 eV	Th

861. R. Della Picca, P. D. Fainstein, M. L. Martiarena, A. Dubois
Zeros in the photoionization partial cross sections of ${H_2}^+$.
Phys. Rev. A 77, 022702 (2007)

hν + ${H_2}^+$	Photoionization		Th

862. S. Kar, Y. K. Ho
Ratio of double-to-single photoionization cross sections of plasma-embedded helium atoms at x-ray energies.
Phys. Rev. A 77, 022713 (2007)

hν + He	Photoionization	2.8 keV	Th

863. S. Saugout, E. Charron, C. Cornaggia
H_2 double ionization with few-cycle laser pulses.
Phys. Rev. A 77, 023404 (2007)

hν + H_2	Photoionization	2×10^{14}-2×10^{15} W/cm^2	E/T

864. M. G. Makris, P. Lambropoulos
Reexamination of multiphoton ionization of xenon under 12.7-eV radiation.
Phys. Rev. A 77, 023415 (2007)

hν + Xe	Photoionization	12.7 eV	Th

865. D. A. Horner, T. N. Rescigno, C. W. McCurdy
Decoding sequential versus nonsequential two-photon double ionization of helium using nuclear recoil.
Phys. Rev. A 77, 030703 (2007)

hν + He	Photoionization	44−58 eV	Th
2hν + He	Photoionization	44−58 eV	Th

866. S. Kumar, V. Sharma, D. Mehta, N. Singh
Alignment of M_i (i = 3-5) subshell vacancy states in $_{79}Au$, $_{83}Bi$, $_{90}Th$, and $_{92}U$ following photoionization by unpolarized Mn K x rays.
Phys. Rev. A 77, 032510 (2007)

hν + Au	Fluorescence	5.98 keV	E/T
hν + Bi	Fluorescence	5.98 keV	E/T
hν + Th	Fluorescence	5.98 keV	E/T
hν + U	Fluorescence	5.98 keV	E/T
hν + Au	Photoionization	5.98 keV	E/T
hν + Bi	Photoionization	5.98 keV	E/T
hν + Th	Photoionization	5.98 keV	E/T
hν + U	Photoionization	5.98 keV	E/T

867. R. Puettner, Y. F. Hu, G. M. Bancroft, A. Kivimaki, M. Jurvansuu, H. Aksela, S. Aksela
Strong nonmonopole shake transitions in the Br $3d^{-1}$ $np\pi$ (n = 6-9) resonant Auger spectra of HBr.
Phys. Rev. A 77, 032705 (2007)

hν + HBr	Photoionization	59.4−78 eV	Exp

868. A. Palacios, T. N. Rescigno, C. W. McCurdy
Cross sections for short-pulse single and double ionization of helium.
Phys. Rev. A 77, 032716 (2007)

hν + He	Photoionization	12.5−65 eV	Th

869. A. Sankari, R. Sankari, S. Heinasmaki, S. Aksela, H. Aksela, A. Kivimaki, M. Coreno, M. de Simone, K. C. Prince
Interference effects in the decay of the 3d -¿ 5p,6p excitations of Kr studied with fluorescence spectroscopy.
Phys. Rev. A 77, 032720 (2007)

hν + Kr	Fluorescence	909.8−92.8 eV	Exp
hν + Kr	Photoexcitation	909.8−92.8 eV	Exp

870. S. Borbely, K. Tokesi, L. Nagy
Ionization of the hydrogen atom by intense ultrashort laser pulses.
Phys. Rev. A 77, 033412 (2007)

hν + H	Photoionization	1.36 eV	Th
nhν + H	Photoionization	1.36 eV	Th

871. L. Guo, J. Chen, J. Liu, Y. Q. Gu
Origin of the double-peak structure in longitudinal momentum distributions for single ionization of an He atom in strong laser field.
Phys. Rev. A 77, 033413 (2007)

hν + He	Photoionization	79.5 nm	Th
nhν + He	Photoionization	79.5 nm	Th

872. W. Guo, J. Zhu, B. Wang, Y. Wang, L. Wang
Angular distributions of fragment ions of N_2 in a femtosecond laser field.
Phys. Rev. A 77, 033415 (2007)

hν + N_2	Photodissociation	820 nm	Exp
nhν + N_2	Photodissociation	820 nm	Exp
hν + N_2	Photoionization	820 nm	Exp
nhν + N_2	Photoionization	820 nm	Exp

873. F. Anis, B. D. Esry
Role of nuclear rotation in dissociation of $H_2{}^+$ in a short laser pulse.
Phys. Rev. A 77, 033416 (2007)

hν + $H_2{}^+$	Photodissociation	785 nm	Th
nhν + $H_2{}^+$	Photodissociation	785 nm	Th

874. L.E.E. de Araujo
Selective and efficient excitation of diatomic molecules by an ultrashort pulse train.
Phys. Rev. A 77, 033419 (2007)

hν + K_2	Photoexcitation	845 nm	Th
nhν + K_2	Photoexcitation	845 nm	Th

875. P. Kalman, I. Nagy
Pulse-length dependence of multiphoton ionization by phase-controlled ultrashort x-ray pulses.
Phys. Rev. A 77, 033423 (2007)

hν + Be	Photoionization	57.49 eV	Th
nhν + Be	Photoionization	57.49 eV	Th

876. O. Chuluunbaatar, A. A. Gusev, S. I. Vinitsky, V. L. Derbov, L. A. Melnikov, V. V. Serov
Photoionization and recombination of a hydrogen atom in a magnetic field.
Phys. Rev. A 77, 034702 (2007)

hν + H	Photoionization	6−8 cm^{-1}	Th

877. K. Jankala, S. Urpelainen, M. Huttula, S. Fritzsche, S. Heinasmaki, S. Aksela, H. Aksela
Inner-shell 2p photoionization and Auger decay of atomic silicon.
Phys. Rev. A 77, 062504 (2008)

hν + Si	Photoionization	140 eV	E/T

878. M. Saleem, S. Hussain, M. A. Baig
Angular momentum dependence of photoionization cross section from the excited states of lithium isotopes.
Phys. Rev. A 77, 062506 (2008)

hν + Li	Photoionization	5.4−8.4 eV	Exp
hν + Li*	Photoionization	5.4−8.4 eV	Exp

879. P. Sivakumar, C. P. McRaven, D. Combs, N. E. Shafer-Ray, V. Ezhov
State-selective detection of the PbF molecule by doubly resonant multiphoton ionization.
Phys. Rev. A 77, 062508 (2008)

hν + PbF	Photoionization	2.3−2.8 eV	Exp

880. J. D. Wright, T. J. Morgan, L. Li, Q. Gu, J. L. Knee, I. D. Petrov, V. L. Sukhorukov, H. Hotop
Photoionization spectroscopy of even-parity autoionizing Rydberg states of argon: Experimental and theoretical investigation of Fano profiles and resonance widths.
Phys. Rev. A 77, 062512 (2008)

hν + Ar	Photoionization	33,250−35,420 cm^{-1}	E/T
hν + Ar*	Photoionization	33,250−35,420 cm^{-1}	E/T

881. L. U. Ancarani, G. Gasaneo, F. D. Colavecchia, C. Dal Cappello
Interplay of initial and final states for (e,3e) and (gamma,2e) processes on helium.
Phys. Rev. A 77, 062712 (2008)

hν + He	Photoionization	5.6 keV	Th

882. J.-P. Karr, F. Bielsa, A. Douillet, J. Pedregosa-Gutierrez, V. I. Korobov, L. Hilico
Vibrational spectroscopy of $H_2{}^+$: Hyperfine structure of two-photon transitions.
Phys. Rev. A 77, 063410 (2008)

hν + $H_2{}^+$	Photoexcitation	10.6 μ m	Th

883. X.-B. Bian, L.-Y. Peng, T.-Y. Shi
Enhanced excitation and ionization of $H_2{}^+$ by a single- and two-color intense laser pulse.
Phys. Rev. A 77, 063415 (2008)

hν + $H_2{}^+$	Photoexcitation	4−14 a.u.	Th
hν + $H_2{}^+$	Photoionization	4−14 a.u.	Th

884. J. McKenna, A. M. Sayler, B. Gaire, N. G. Johnson, E. Parke, K. D. Carnes, B. D. Esry, I. Ben-Itzhak
Intensity dependence in the dissociation branching ratio of ND^+ using intense femtosecond laser pulses.
Phys. Rev. A 77, 063422 (2007)

hν + NH^+	Photodissociation	1.55 eV	Exp
hν + ND^+	Photodissociation	1.55 eV	Exp

885. P. C. Deshmukh, T. Banerjee, H. R. Varma, O. Hemmers, R. Guillemin, D. Rolles, A. Wolska, S. W. Yu, D. W. Lindle, W. R. Johnson, S. T. Manson
Theoretical and experimental demonstrations of the existence of quadrupole Cooper minima.
J. Phys. B 41, 021002 (2008)

hν + Xe	Photoionization	8−210 eV	E/T

886. Y. Hikosaka, P. Lablanquie, E. Shigemasa, T. Aoto, K. Ito
Sub-natural linewidth spectroscopy on core-valence doubly ionized states of OCS.
J. Phys. B 41, 025103 (2008)

hν + OCS	Photoionization	220−250 eV	Exp

887. A. S. Alnaser, D. Comtois, A. T. Hasan, D. M. Villeneuve, J.-C. Kieffer, I. V. Litvinyuk
Strong-field non-sequential double ionization: Wavelength dependence of ion momentum distributions for neon and argon.
J. Phys. B 41, 031001 (2008)

hν + Ne^{2+}	Photoionization	485−2000 nm	Exp
hν + Ar^{2+}	Photoionization	485−2000 nm	Exp

888. L. Argenti, R. Moccia
Helium 2^3S photoionization up to the N = 5 threshold.
J. Phys. B 41, 035002 (2008)

hν + He	Photoionization	5−60 eV	Th
hν + He^*	Photoionization	5−60 eV	Th

889. M. A. Baig, M. Hanif, M. Aslam
Laser-optogalvanic studies of the $4p^5$ ns and nd autoionizing resonances in krypton.
J. Phys. B 41, 035004 (2008)

hν + Kr	Photoexcitation	115,700−117,800 cm^{-1}	Exp
hν + Kr^*	Photoexcitation	115,700−117,800 cm^{-1}	Exp
hν + Kr	Photoionization	115,700−117,800 cm^{-1}	Exp
hν + Kr^*	Photoionization	115,700−117,800 cm^{-1}	Exp

890. S. Osmekhin, M. Huttula, S. Urpelainen, H. Aksela, S. Aksela
Cascade Auger transitions following Cs $4d_{5/2}{}^{-1}6p$ excitation and Cs 4d ionization.
J. Phys. B 41, 035006 (2008)

hν + Cs	Photoexcitation	49.5−45.5 eV	E/T
hν + Cs	Photoionization	49.5−45.5 eV	E/T

891. J. Niskanen, J. Nikkinen, S. Heinasmaki, M. Huttula, K. Jankala, S. Fritzsche, S. Aksela, H. Aksela
Interference effects in resonant Auger decay of atomic caesium.
J. Phys. B 41, 035007 (2008)

hν + Cs	Photoexcitation	78−84 eV	E/T
hν + Cs	Photoionization	78−84 eV	E/T

892. J. D. Bozek, J. E. Furst, T. J. Gay, H. Gould, A.L.D. Kilcoyne, J. R. Machacek, F. Martin, K. W. McLaughlin, J. L. Sanz-Vicario
Production of excited atomic hydrogen and deuterium from H2 and D2 photodissociation.
J. Phys. B 41, 039801 (2008)

hν + H_2	Photodissociation	24−60 eV	E/T
hν + D_2	Photodissociation	24−60 eV	E/T
hν + H_2	Fluorescence	24−60 eV	E/T
hν + D_2	Fluorescence	24−60 eV	E/T

893. F. Penent, S. Sheinerman, L. Andric, P. Lablanquie, J. Palaudoux, U. Becker, M. Braune, J. Viefhaus, J. H. Eland
Dynamics of electron emission in double photoionization processes near the krypton 3d threshold.
J. Phys. B 41, 045002 (2008)

hν + Kr	Photoionization	94.74−100.04 eV	E/T

894. H. Fukuzawa, X.-J. Liu, R. Montuoro, R. R. Lucchese, Y. Morishita, N. Saito, M. Kato, I. H. Suzuki, Y. Tamenori, T. Teranishi, T. Lischke, G. Pruemper, K. Ueda
Nitrogen K-shell photoelectron angular distribution from NO molecules in the molecular frame.
J. Phys. B 41, 045102 (2008)

hν + NO	Photoionization	412−415 eV	E/T

895. Ph. V. Demekhin, V. L. Sukhorukov, W. Kielich, L. Werner, S. Klumpp, A. Ehresmann, K. H. Schartner, H. Schmoranzer
Vibrational analysis of the $N_2{}^+(C$ -¿ X) fluorescence in the vicinity of the 1s -¿ π* excitation.
J. Phys. B 41, 045104 (2008)

hν + N_2	Fluorescence	400−403 eV	E/T
hν + N_2	Photoexcitation	400−403 eV	E/T

896. I. Liontos, S. Cohen, A. Bolovinos
Single and double ionization of strontium in the vicinity of four-photon excitation of the $5p^{21}S_0$ doubly excited state.
J. Phys. B 41, 045601 (2008)

hν + Sr	Photoionization	710−740 nm	Exp
nhν + Sr	Photoionization	710−740 nm	Exp

897. E. Foumouo, Ph. Antoine, B. Piraux, L. Malegat, H. Bachau, R. Shakeshaft
Evidence for highly correlated electron dynamics in two-photon double ionization of helium.
J. Phys. B 41, 051001 (2008)

hν + He	Photoionization	25−110 eV	Th

898. O. Guyetand, M. Gisselbrecht, A. Huetz, P. Agostini, R. Taieb, A. Maquet, B. Carre, P. Breger, O. Gobert, D. Garzella, J.-F. Hergott, O. Tcherbakoff, H. Merdji, M. Bougeard, H. Rottke, M. Bottcher, Z. Ansari, P. Antoine
Evolution of angular distributions in two-colour, few-photon ionization of helium.
J. Phys. B 41, 051002 (2008)

hν + He	Photoionization	10^{12} W/cm^2	E/T

899. P. Bolognesi, V. Feyer, A. Kheifets, S. Turchini, T. Prosperi, N. Zema, L. Avaldi
Photodouble ionization of He with curcularly polarized synchrotron radiation: Complete experiment and dynamic nodes.
J. Phys. B 41, 051003 (2008)

hν + He	Photoionization	127 eV	E/T

900. A. Krzykowski, D. Stefanska
Hyperfine structure measurements of the even electron levels in scandium atom.
J. Phys. B 41, 055001 (2008)

hν + Sc	Fluorescence	400−43,000 cm^{-1}	Exp

901. S. Mandal, G. Dixit, B. K. Sahoo, R. K. Chaudhuri, S. Majumder
Theoretical spectroscopic studies of the atomic transitions and lifetimes of low-lying states in Ti IV.
J. Phys. B 41, 055701 (2008)

hν + Ti^{3+}	Photoexcitation	300−21,000 cm^{-1}	Th

902. I. D. Petrov, V. L. Sukhorukov, H. Hotop
Photoionization of excited Ne*($2p^5$ 3p,J=3) atoms near threshold.
J. Phys. B 41, 065205 (2008)

hν + Ne	Photoionization	3−5.5 eV	Th
hν + Ne*	Photoionization	3−5.5 eV	Th

903. O. Guyetand, M. Gisselbrecht, A. Huetz, P. Agostini, B. Carre, P. Breger, O. Gobert, D. Garzella, J.-F. Hergott, O. Tcherbakoff, H. Merdji, M. Bougeard, H. Rottke, M. Bottcher, Z. Ansari, P. Antoine, L. F. DiMauro
Complete momentum analysis of multiphoton photodouble ionization of xenon by XUV and infrared photons.
J. Phys. B 41, 065601 (2008)

hν + Xe	Photoionization	29−38 eV	Exp

904. F. He, C. Ruiz, A. Becker
Coherent control of electron wave packets in dissociating $H_2{}^+$.
J. Phys. B 41, 081003 (2008)

hν + $H_2{}^+$	Photodissociation	3×10^{12} W/cm^2	Th

905. A. Rudenko, Th. Ergler, K. Zrost, B. Feuerstein, V.L.B. de Jesus, C. D. Schroeter, R. Moshammer, J. Ullrich
From non-sequential to sequential strong-field multiple ionization: Identification of pure and mixed reaction channels.
J. Phys. B 41, 081006 (2008)

hν + Ne	Photoionization	795 nm	Exp

906. D. V. Lopaev, E. M. Malykhin, V. A. Namiot
UV absorption of vibrationally excited ozone.
J. Phys. B 41, 085104 (2008)

hν + O_3	Total Absorption, Scattering	350−1200 K	Th
hν + $O_3{}^*$	Total Absorption, Scattering	350−1200 K	Th
hν + O_3	Photoexcitation	350−1200 K	Th
hν + $O_3{}^*$	Photoexcitation	350−1200 K	Th

907. M. Hoshino, R. Montuoro, R. R. Lucchese, A. De Fanis, U. Hergenhahn, G. Pruemper, T. Tanaka, K. Ueda
Vibrationally resolved partial cross sections and asymmetry parameters for nitrogen K-shell photoionization of the NO molecule.
J. Phys. B 41, 085105 (2008)

hν + NO	Photoionization	412−419 eV	Exp
hν + NO*	Photoionization	412−419 eV	Exp

908. J. Colgan, A. Huetz, T. J. Reddish, M. S. Pindzola
Internuclear separation dependence of the angular distributions from photoionization of $H_2{}^+$.
J. Phys. B 41, 085202 (2008)

hν + $H_2{}^+$	Photoionization	65 eV	Th

909. I. A. Ivanov, A. S. Kheifets
Perturbative calculation of two-photon double electron ionization of helium.
J. Phys. B 41, 095002 (2008)

hν + He	Photoionization	40−54 eV	E/T

910. S. L. Sorensen, K. J. Borve, R. Feifel, A. De Fanis, K. Ueda
The O 1s photoelectron spectrum of molecular oxygen revisited.
J. Phys. B 41, 095101 (2008)

hν + O_2	Photoionization	554−594 eV	E/T

911. M. Wiedenhoeft, S. E. Canton, A. A. Wills, T. W. Gorczyca, J. Viefhaus, U. Becker, N. Berrah
Coincident energy and angular distributions in xenon $4d_{5/2}$ inner-shell double photoionization.
J. Phys. B 41, 095202 (2008)

hν + Xe	Photoionization	97.45 eV	Exp

912. K. Kreidi, T. Jahnke, Th. Weber, T. Havermeier, R. E. Grisenti, X. Liu, Y. Morisita, S. Schoessler, L.Ph.H. Schmidt, M. Schoeffler, M. Odenweller, N. Neumann, L. Foucar, J. Titze, B. Ulrich, F. Sturm, C. Stuck, R. Wallauer, S. Voss, I. Lauter, H. K. Kim, M. Rudloff, H. Fukuzawa, G. Pruemper, N. Saito, K. Ueda, A. Czasch, O. Jagutzki, H. Schmidt-Boecking, S. K. Semenov, N. A. Cherepkov, R. Doerner
Localization of inner-shell photoelectron emission and interatomic Coulombic decay in Ne_2.
J. Phys. B 41, 101002 (2008)

hν + Ne_2	Photoionization	881.2 eV	Exp

913. M. E. Madjet, H. S. Chakraborty, J. M. Rost, S. T. Manson
Photoionization of C_{60}: A model study.
J. Phys. B 41, 105101 (2008)

hν + C_{60}	Photoionization	10−90 eV	Th

914. I. C. Walker, D.M.P. Holland, D. A. Shaw, I. J. McEwen, M. F. Guest
The electronic states of ethylene oxide studied by photoabsorption and ab initio multireference configuration interaction calculations.
J. Phys. B 41, 115101 (2008)

hν + C_3H_6	Total Absorption, Scattering	5−29 eV	E/T
hν + C_2H_4O	Total Absorption, Scattering	5−29 eV	E/T
hν + C_2H_4S	Total Absorption, Scattering	5−29 eV	E/T

915. M. Rafiq, M. A. Kalyar, M. A. Baig
Photoexcitation study of the 4s $^2S_{1/2}$ state of atomic sodium.
J. Phys. B 41, 115701 (2008)

hν + Na	Elastic Scattering	10^{-6}-10^{-5} a.u.	Exp

916. L. Hamonou, H. W. van der Hart
On the importance of inner-shell contributions to multiphoton ionization of complex atoms in the VUV regime.
J. Phys. B 41, 121001 (2008)

hν + $\mathbf{Ne^+}$	Photoionization	25−40 eV	Th

917. J. Colgan, M. S. Pindzola, F. Robicheaux
Two-photon double ionization of the hydrogen molecule.
J. Phys. B 41, 121002 (2008)

hν + $\mathbf{H_2}$	Photoionization	30 eV	Th

918. Z. Bao, R. F. Fink, O. Travnikova, D. Ceolin, S. Svensson, M.-N. Piancastelli
Detailed theoretical and experimental description of normal Auger decay in O_2.
J. Phys. B 41, 125101 (2008)

hν + $\mathbf{O_2}$	Photoionization	542−546 eV	E/T

919. J. Huang, Q. Zhao, G. Jiang
Energy levels, transition probabilities, and electron impact excitation collision strengths for Xe XXVII.
At. Data Nucl. Data Tables 93, 864 (2007)

hν + $\mathbf{Xe^{26+}}$	Photoexcitation	10−1500 eV	Th

920. E. Landi, A. K. Bhatia
Atomic data and spectral line intensities for S XIII.
At. Data Nucl. Data Tables 94, 1 (2007)

hν + $\mathbf{S^{12+}}$	Photoexcitation	10−225 Ry	Th

921. M. B. Trzhaskovskaya, V. K. Nikulin, R.E.H. Clark
Radiative recombination and photoionization cross sections for heavy element impurities in plasmas.
At. Data Nucl. Data Tables 94, 71 (2007)

hν + $\mathbf{Fe^{7+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Fe^{15+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Fe^{23+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Fe^{24+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Fe^{25+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Ni^{9+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Ni^{17+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Ni^{25+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Ni^{26+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Ni^{27+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Cu^{10+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Cu^{18+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Cu^{26+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Cu^{27+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Cu^{28+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Mo^{5+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Mo^{13+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Mo^{23+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Mo^{31+}}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Mo^{39+}}$	Photoionization	4−50,000 eV	Th

hν + $\mathbf{Mo}^{40+}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{Mo}^{41+}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{W}^{5+}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{W}^{27+}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{W}^{37+}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{W}^{45+}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{W}^{55+}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{W}^{63+}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{W}^{71+}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{W}^{72+}$	Photoionization	4−50,000 eV	Th
hν + $\mathbf{W}^{73+}$	Photoionization	4−50,000 eV	Th

922. M. Raineri, C. Lagorio, S. Padilla, M. Gallardo, J. Reyna Almandos
Weighted oscillator strengths for the Xe IV spectrum.
At. Data Nucl. Data Tables 94, 140 (2007)

hν + $\mathbf{Xe}^{3+}$	Photoexcitation	100,000−10,000 Å	Th

923. A. K. Bhatia, E. Landi
Atomic data and spectral line intensities for Ar XV.
At. Data Nucl. Data Tables 94, 223 (2007)

hν + $\mathbf{Ar}^{14+}$	Photoexcitation	10−300 Ry	Th

924. K. M. Aggarwal, F. P. Keenan, K. D. Lawson
Energy levels and radiative rates for transitions in B-like to F-like Kr ions (Kr XXXII-XXVIII).
At. Data Nucl. Data Tables 94, 323 (2007)

hν + $\mathbf{Kr}^{27+}$	Photoexcitation		Th
hν + $\mathbf{Kr}^{28+}$	Photoexcitation		Th
hν + $\mathbf{Kr}^{29+}$	Photoexcitation		Th
hν + $\mathbf{Kr}^{30+}$	Photoexcitation		Th
hν + $\mathbf{Kr}^{31+}$	Photoexcitation		Th

925. N. C. Deb, A. Hibbert
Oscillator strengths and radiative rates for transitions in neutral sulfur.
At. Data Nucl. Data Tables 94, 561 (2007)

hν + **S**	Photoexcitation		Th

926. K. M. Aggarwal, F. P. Keenan, A. Z. Msezane
Energy levels and radiative rates for transitions in Co XI.
Astron. Astrophys. 473, 995 (2007)

hν + $\mathbf{Co}^{10+}$	Photoexcitation	0−14 Ry	Th

927. P. Quinet, C. Argante, V. Fivet, C. Terranova, A. V. Yushchenko, E. Biemont
Atomic data for radioactive elements Ra I, Ra II, Ac I and Ac II and application to their detection in HD 101065 and HR 465.
Astron. Astrophys. 474, 307 (2007)

hν + **Ra**	Photoexcitation	8000−2700 Å	Th
hν + $\mathbf{Ra}^{+}$	Photoexcitation	8000−2700 Å	Th
hν + **Ac**	Photoexcitation	8000−2700 Å	Th
hν + $\mathbf{Ac}^{+}$	Photoexcitation	8000−2700 Å	Th

928. K. M. Aggarwal, F. P. Keenan
Energy levels, radiative rates and excitation rates for transitions in Ni XI.
Astron. Astrophys. 475, 393 (2007)

hν + Ni^{10+}	Photoexcitation	10^2-10^7 K	Th

929. H. Hartman, J. Gurell, P. Lundin, P. Schef, A. Hibbert, H. Lundberg, S. Mannervik, L.-O. Norlin, P. Royen
The FERRUM project: Experimental and theoretical transition rates of forbidden [Sc II] lines and radiative lifetimes of metastable Sc II levels.
Astron. Astrophys. 480, 575 (2008)

hν + Sc^+	Photoexcitation	8390−8270 $\AA$	E/T

930. L. B. Zhao, P. C. Stancil
Hydrogen photoionization cross sections for strong-field magnetic white dwarfs.
Astrophys. J. 667, 1119 (2007)

hν + H	Photoionization	0.0−3.0 a.u.	Th

931. J. S. Sobeck, J. E. Lawler, C. Sneden
Improved laboratory transition probabilities for neutral chromium and redetermination of the chromium abundance for the sun and three stars.
Astrophys. J. 667, 1267 (2007)

hν + Cr	Photoexcitation	9700−2700 $\AA$	Exp

932. Y.-J. Wu, H.-C. Lu, H.-K. Chen, B.-M. Cheng, Y.-P. Lee, L. C. Lee
Photoabsorption cross sections of NH_3, NH_2D, NHD_2, and ND_3 in the spectral range 110-144 nm.
J. Chem. Phys. 127, 154311 (2007)

hν + NH_3	Photoexcitation	144−110 nm	Exp
hν + ND_3	Photoexcitation	144−110 nm	Exp
hν + NH_2D	Photoexcitation	144−110 nm	Exp
hν + NHD_2	Photoexcitation	144−110 nm	Exp

933. U. Hechtfischer, J. Rostas, M. Lange, J. Linkemann, D. Schwalm, R. Wester, A. Wolf, D. Zajfman
Photodissociation spectroscopy of stored CH^+ and CD^+ ions: Analysis of the b $^3\Sigma^-$ -a $^3\Pi$ system.
J. Chem. Phys. 127, 204304 (2007)

hν + CH^+	Photodissociation	32,000 cm^{-1}	Exp
hν + CD^+	Photodissociation	32,000 cm^{-1}	Exp

934. J. J. Gilijamse, S. Hoekstra, S. A. Meek, M. Metsala, S.Y.T. van de Meerakker, G. Meijer, G. C. Groenenboom
The radiative lifetime of metastable CO (a $^3\Pi$, v=0).
J. Chem. Phys. 127, 221102 (2007)

hν + CO	Photoexcitation	200 nm	E/T

935. T. W. Schmidt, G. B. Bacskay
Oscillator strengths of the Mulliken, Swan, Ballik-Ramsay, Phillips, and $d^3\Pi_g$ ¡- $c^3\Sigma_u{}^+$ systems of C_2 calculated by MRCI methods utilizing a biorthogonal transformation of CASSCF orbitals.
J. Chem. Phys. 127, 234310 (2007)

hν + C_2	Photoexcitation	2300 Å	Th

936. R. Feifel, Y. Velkov, V. Carravetta, C. Angeli, R. Cimiraglia, P. Salek, F. Gel'mukhanov, S. L. Sorensen, M.-N. Piancastelli, A. De Fanis, K. Okada, M. Kitajima, T. Tanaka, H. Tanaka, K. Ueda
X-ray absorption and resonant Auger spectroscopy of O_2 in the vicinity of the O 1s -¿ σ* resonance: Experiment and theory.
J. Chem. Phys. 128, 064304 (2008)

hν + O_2	Photoionization	535−545 eV	E/T

937. R. Flesch, A. Wirsing, M. Barthel, J. Plenge, E. Ruehl
Inner-valence photoionization of $O(^1D)$: Experimental evidence for the $2s^2 2p^4 (^1D)$ -¿ $2s^1 2p^5 (^1P)$ transition.
J. Chem. Phys. 128, 074307 (2008)

hν + O	Photoionization	12−26 eV	Exp

938. X. Yang, J. Zhou, B. Jones, C. Y. Ng, W. M. Jackson
Vacuum ultraviolet excitation spectroscopy of the autoionizing Rydberg states of atomic sulfur in the 73,350-84,950 cm^{-1} frequency range.
J. Chem. Phys. 128, 084303 (2008)

hν + S	Photoionization	73,350−84,950 cm^{-1}	Exp

939. M. Glass-Maujean, S. Klumpp, L. Werner, A. Ehresmann, H. Schmoranzer
The study of the D' $^1\Pi_u$ state of H_2: Transition probabilities from the ground state, predissociation yields, and natural linewidths.
J. Chem. Phys. 128, 094312 (2008)

hν + H_2	Photoexcitation	81−72 nm	Exp

940. G. Stark, B. R. Lewis, A. N. Heays, K. Yoshino, P. L. Smith, K. Ito
Oscillator strengths and line widths of dipole-allowed transitions in $^{14}N_2$ between 89.7 and 93.5 nm.
J. Chem. Phys. 128, 114302 (2008)

hν + N_2	Photoexcitation	93.5−89.7 nm	Exp

941. Y. J. Yu, C. Z. Dong, J. G. Li, B. Fricke
The excitation energies, ionization potentials, and oscillator strengths of neutral and ionized species of Uuq (Z = 114) and the homolog elements Ge, Sn, and Pb.
J. Chem. Phys. 128, 124316 (2008)

hν + Ge	Photoexcitation	35,000−320,000 cm^{-1}	Th
hν + Sn	Photoexcitation	35,000−320,000 cm^{-1}	Th
hν + Pb	Photoexcitation	35,000−320,000 cm^{-1}	Th
hν + Uuq	Photoexcitation	35,000−320,000 cm^{-1}	Th

942. A. B. Alekseyev, R. J. Buenker, H.-P. Liebermann
Ab initio study of the KrH^+ photodissociation.
J. Chem. Phys. 128, 234308 (2008)

hν + KrH^+	Photodissociation	60,000−140,000 cm^{-1}	Th

943. Z. Kaliman, K. Pisk, T. Suric
Angular correlations in double ionization of helium by high-energy Compton scattering.
Nucl. Instrum. Methods Phys. Res. A 580, 43 (2007)

hν + He	Photoionization	30−80 keV	Th

944. K. Chen, M. Cui, L. Zheng
Transmission measurement of photoabsorption cross-section of titanium in the region of 4050-5950 eV.
Nucl. Instrum. Methods Phys. Res. A 580, 62 (2007)

hν + Ti	Total Absorption, Scattering	4.0−5.9 keV	Exp

945. R. K. Manchanda, R. K. Sood, D. J. Grey, D. J. Isbister
Transport and recombination of electrons in a high pressure proportional counter using different gas mixtures.
Nucl. Instrum. Methods Phys. Res. A 594, 605 (2008)

hν + Ar	Total Absorption, Scattering	5−110 keV	Exp
hν + Xe	Total Absorption, Scattering	5−110 keV	Exp
hν + CH_4	Total Absorption, Scattering	5−110 keV	Exp

946. R. D. Rivarola
Coherent electron emission from molecular targets.
Nucl. Instrum. Methods Phys. Res. B 261, 161 (2007)

hν + H_2	Photoionization	60 MeV; 2.4 keV; 0−20 a.u.	Th
hν + H_2^+	Photoionization	60 MeV; 2.4 keV; 0−20 a.u.	Th

947. R. H. Pratt, L. A. LaJohn, T. Suric, B. K. Chatterjee, S. C. Roy
Limitations on the validity of impulse approximation in Compton scattering.
Nucl. Instrum. Methods Phys. Res. B 261, 175 (2007)

hν + Be	Elastic Scattering	10−450 keV	Th
hν + Cu	Elastic Scattering	10−450 keV	Th
hν + U	Elastic Scattering	10−450 keV	Th

948. D. V. Rao, T. Yuasa, T. Akatsuka, G. Tromba, T. Takeda, R. Cesareo, A. Brunetti, G. E. Gigante
Whole-atom Compton scattering cross-sections and individual shell cross-sections for the biological elements in the energy region from 1 to 4 keV.
Nucl. Instrum. Methods Phys. Res. B 261, 193 (2007)

hν + A	Elastic Scattering	1-10^4 keV	Th

949. U. Cevik, S. Kaya, B. Ertugral, H. Baltas, S. M. Karabidak
K-shell X-ray fluorescence cross-sections and intensity ratios for some pure metals at 59.5 and 123.6 keV.
Nucl. Instrum. Methods Phys. Res. B 262, 165 (2007)

hν + Cr	Fluorescence	60−124 keV	Exp
hν + Fe	Fluorescence	60−124 keV	Exp
hν + Co	Fluorescence	60−124 keV	Exp
hν + Cu	Fluorescence	60−124 keV	Exp
hν + Zn	Fluorescence	60−124 keV	Exp
hν + Ga	Fluorescence	60−124 keV	Exp
hν + Se	Fluorescence	60−124 keV	Exp
hν + Y	Fluorescence	60−124 keV	Exp
hν + Mo	Fluorescence	60−124 keV	Exp
hν + Cd	Fluorescence	60−124 keV	Exp
hν + In	Fluorescence	60−124 keV	Exp

hν + Sn	Fluorescence	60−124 keV	Exp
hν + Te	Fluorescence	60−124 keV	Exp
hν + Ba	Fluorescence	60−124 keV	Exp
hν + Ta	Fluorescence	60−124 keV	Exp
hν + W	Fluorescence	60−124 keV	Exp
hν + Bi	Fluorescence	60−124 keV	Exp
hν + Cr	Photoionization	60−124 keV	Exp
hν + Fe	Photoionization	60−124 keV	Exp
hν + Co	Photoionization	60−124 keV	Exp
hν + Cu	Photoionization	60−124 keV	Exp
hν + Zn	Photoionization	60−124 keV	Exp
hν + Ga	Photoionization	60−124 keV	Exp
hν + Se	Photoionization	60−124 keV	Exp
hν + Y	Photoionization	60−124 keV	Exp
hν + Mo	Photoionization	60−124 keV	Exp
hν + Cd	Photoionization	60−124 keV	Exp
hν + In	Photoionization	60−124 keV	Exp
hν + Sn	Photoionization	60−124 keV	Exp
hν + Te	Photoionization	60−124 keV	Exp
hν + Ba	Photoionization	60−124 keV	Exp
hν + Ta	Photoionization	60−124 keV	Exp
hν + W	Photoionization	60−124 keV	Exp
hν + Bi	Photoionization	60−124 keV	Exp

950. S. Kumar, V. Sharma, D. Mehta, N. Singh
Rayleigh, Compton and K-shell radiative resonant Raman scattering in $_{83}Bi$ for 88.034 keV $\gamma - rays$.
Nucl. Instrum. Methods Phys. Res. B 264, 1 (2007)

hν + Bi	Elastic Scattering	88 keV	Exp

951. K. Ohya, K. Inai, A. Nisawa, A. Itoh
Emission statistics of X-ray induced photoelectrons and its comparison with electron- and ion-induced electron emissions.
Nucl. Instrum. Methods Phys. Res. B 266, 541 (2008)

hν + Au	Total Absorption, Scattering	1−100 keV	Th
hν + Au	Photoionization	1−100 keV	Th

952. J. Padeznik Gomilsek, A. Kodre, I. Arcon, V. Nemanic
X-ray absorption in atomic potassium.
Nucl. Instrum. Methods Phys. Res. B 266, 677 (2008)

hν + K	Total Absorption, Scattering	3600−4200 eV	Exp

953. A. Staudte, C. Ruiz, M. Schoeffler, S. Schoessler, D. Zeidler, Th. Weber, M. Meckel, D. M. Villeneuve, P. B. Corkum, A. Becker, R. Doerner
Binary and recoil collisions in strong field double ionization of helium.
Phys. Rev. Lett. 99, 263002 (2007)

hν + He	Photoionization	800 nm	Exp

954. A. Rudenko, V. L. de Jesus, Th. Ergler, K. Zrost, B. Feuerstein, C. D. Schroeter, R. Moshammer, J. Ullrich
Correlated two-electron momentum spectra for strong-field nonsequential double ionization of He at 800 nm.
Phys. Rev. Lett. 99, 263003 (2007)

hν + He	Photoionization	800 nm	Exp

955. G. P. Gupta, A. Z. Msezane
Fine-structure energy levels, oscillator strengths and lifetimes in Mn XIII.
Phys. Scr. 76, 225 (2007)

hν + Mn^{12+}	Photoexcitation		Th

956. J. H. Bauer
Simple proof of gauge invariance for the S-matrix element of strong-field photoionization.
Phys. Scr. 77, 015303 (2008)

hν + H	Photoionization		Th

957. S. B. Whitfield, K. Caspary, R. Wehlitz, M. Martins
Photoionization of atomic thulium in the region of the 5p excitations.
J. Phys. B 41, 015001 (2008)

hν + Tm	Photoionization	23−38 eV	E/T

958. L. Hamonou, H. W. van der Hart, K. M. Dunseath, M. Terao-Dunseath
Two-photon emission of a 2p electron from Ne^+ and consequences for sequential double ionization of Ne.
J. Phys. B 41, 015603 (2008)

hν + Ne^+	Photoionization	25−40 eV	Th

959. A. Sankari, R. Sankari, S. Heinaesmaeki, M. Huttula, S. Aksela, H. Aksela
4d photoionization and subsequent Auger decay in atomic Eu.
Phys. Rev. A 77, 052703 (2008)

hν + Eu	Photoionization	165−310 eV	E/T

960. A. Kiess, D. Pavicic, T. W. Haensch, H. Figger
HD^+ in a beam in intense pulsed laser fields: Dissociation and ionization with high-energy resolution of the fragments.
Phys. Rev. A 77, 053401 (2008)

hν + H_2	Photodissociation	790 nm	Exp
hν + HD^+	Photodissociation	790 nm	Exp
hν + H_2	Photoionization	790 nm	Exp
hν + HD^+	Photoionization	790 nm	Exp

961. N. Rohringer, R. Santra
Resonant Auger effect at high x-ray intensity.
Phys. Rev. A 77, 053404 (2008)

hν + Ne	Photoionization	867.1 eV	Th

962. M. Oura, Y. Senba, H. Ohashi
Resonant enhancement of photoemission leading to the Ne^+ $[2p^2](^1D)3p\ ^2P$ state across the [1s2p]$(^3P)3p^2\ ^1P$ double-excitation resonance of Ne.
Phys. Rev. A 77, 054702 (2008)

hν + Ne	Photoexcitation	900−904 eV	Exp
hν + Ne	Photoionization	900−904 eV	Exp

963. S. M. O'Malley, D. R. Beck
Calculations of Nd^- binding energies and photodetachment partial cross sections.
Phys. Rev. A 77, 012505 (2008)

hν + **Nd**$^-$	Photodetachment	2.41 eV	Th

964. J. Soderstrom, M. Agaker, A. Zimina, R. Feifel, S. Eisebitt, R. Follath, G. Reichardt, O. Schwarzkopf, W. Eberhardt, A. Mihelic, M. Zitnik, J.-E. Rubensson
Radiative decay spectra of selected doubly excited states in helium.
Phys. Rev. A 77, 012513 (2008)

hν + **He**	Fluorescence	64−65 eV	E/T

965. T. Tanaka, M. Hoshino, H. Kato, M. Ehara, N. Yamada, R. Fukuda, H. Nakatsuji, Y. Tamenori, J. R. Harries, G. Pruemper, H. Tanaka, K. Ueda
Vibration-induced suppression of valence-Rydberg mixing in the O 1s -¿ $ns\sigma$ Rydberg series in N_2O.
Phys. Rev. A 77, 012709 (2008)

hν + $\mathbf{N_2O}$	Photoionization	532−542 eV	E/T

966. E. G. Drukarev, E. Z. Liverts, M. Ya. Amusia, R. Krivec, V. B. Mandelzweig
Photoionization accompanied by excitation at intermediate photon energies.
Phys. Rev. A 77, 012715 (2008)

hν + **He**	Photoexcitation	0.05−1000 eV	Th
hν + **Li**$^+$	Photoexcitation	0.05−1000 eV	Th
hν + **C**$^{4+}$	Photoexcitation	0.05−1000 eV	Th
hν + **Ne**$^{8+}$	Photoexcitation	0.05−1000 eV	Th
hν + **Ba**$^{2+}$	Photoexcitation	0.05−1000 eV	Th
hν + **He**	Photoionization	0.05−1000 eV	Th
hν + **Li**$^+$	Photoionization	0.05−1000 eV	Th
hν + **C**$^{4+}$	Photoionization	0.05−1000 eV	Th
hν + **Ne**$^{8+}$	Photoionization	0.05−1000 eV	Th
hν + **Ba**$^{2+}$	Photoionization	0.05−1000 eV	Th

967. S. Pieper, M. Lein
Intrinsic channel closing in strong-field single ionization of H_2.
Phys. Rev. A 77, 041403 (2008)

hν + $\mathbf{H_2}$	Photoionization	800 nm	Th

968. Z. Chen, A. Z. Msezane
Random-phase approximation with exchange for the photoionization of an atom with an inner open shell.
Phys. Rev. A 77, 042703 (2008)

hν + **Sc**	Photoionization	25−45 eV	Th

969. L. Journel, R. Guillemin, A. Haouas, P. Lablanquie, F. Penent, J. Palaudoux, L. Andric, M. Simon, D. Ceolin, T. Kaneyasu, J. Viefhaus, M. Braune, W.-B. Li, C. Elkharrat, F. Catoire, J.-C. Houver, D. Dowek
Resonant double Auger decay in carbon K-shell excitation of CO.
Phys. Rev. A 77, 042710 (2008)

hν + **CO**	Photodissociation	60−1400 eV	Exp
hν + **CO**	Photoexcitation	60−1400 eV	Exp
hν + **CO**	Photoionization	60−1400 eV	Exp

970. C. Liu, T. Nakajima, T. Sakka, H. Ohgaki
Above-threshold ionization and high-order harmonic generation by mid-infrared and far-infrared laser pulses.
Phys. Rev. A 77, 043411 (2008)

hν + K	Photoionization	10−3.3 μ m	Exp

971. O. Atabek, R. Lefebvre, C. Lefebvre, T. T. Nguyen-Dang
Intense-field zero-width resonances and control of molecular photodissociation.
Phys. Rev. A 77, 043413 (2008)

hν + H_2^+	Photodissociation	400 nm	Th

972. J. Zhang, T. Nakajima
Influence of Coulomb potential for photoionization of H atoms in an elliptically polarized laser field: Velocity gauge versus length gauge.
Phys. Rev. A 77, 043417 (2008)

hν + H	Photoionization	10^{12}-10^{16} W/cm^2	Th

973. J. Feist, S. Nagele, R. Pazourek, E. Persson, B. I. Schneider, L. A. Collins, J. Burgdorfer
Nonsequential two-photon double ionization of helium.
Phys. Rev. A 77, 043420 (2008)

hν + He	Photoionization	40−54 eV	Th

974. X. Guan, K. Bartschat, B. I. Schneider
Dynamics of two-photon double ionization of helium in short intense xuv laser pulses.
Phys. Rev. A 77, 043421 (2008)

hν + He	Photoionization	39.5−54 eV	Th

975. J.-F. Wyart, W.-U. L. Tchang-Brillet, S. S. Churilov, A. N. Ryabtsev
Extended analysis of the Eu III spectrum.
Astron. Astrophys. 483, 339 (2008)

hν + Eu^{2+}	Photoexcitation	10,000−2,000 $\AA$	Th

976. S. J. Sweeney, E. H. Ahmed, P. Qi, T. Kirova, A. M. Lyyra, J. Huennekens
Measurement of absolute transition dipole moment functions of the 3 $^1\Pi$ -¿ 1(X)$^1\Sigma^+$ and 3 $^1\Pi$ -¿ 2(A)$^1\Sigma^+$ transitions in NaK using Autler-Townes spectroscopy and calibrated fluorescence.
J. Chem. Phys. 129, 154303 (2008)

hν + NaK	Photoexcitation		Exp

977. O. Salihoglu, P. Qi, E. H. Ahmed, S. Kotochigova, S. Magnier, A. M. Lyyra
Comparison of Autler-Townes splitting based absolute measurements of the $^7Li_2$ A $^1\Sigma_u{}^+$ - X $^1\Sigma_g{}^+$ electronic transition dipole moment with ab initio theory.
J. Chem. Phys. 129, 174301 (2008)

hν + Li_2	Photoexcitation		E/T

978. D. Bressanini, G. Morosi
A compact boundary-condition-determined wavefunction for two-electron atomic systems.
J. Phys. B 41, 145001 (2008)

hν **+ N**$_2$	Photodissociation	500−600 eV	Th
hν **+ N**$_2$	Photoionization	500−600 eV	Th

979. S. Osmekhin, S. Fritzsche, A. N. Grum-Grzhimailo, M. Huttula, H. Aksela, S. Aksela
Angle-resolved study of the Ar $2p_{1/2}{}^{-1}3d$ **resonant Auger decay.**
J. Phys. B 41, 145003 (2008)

hν **+ Ar**	Photoexcitation	249 eV	E/T

980. W. C. Stolte, R. Guillemin, S.-W. Yu, D. W. Lindle
Photofragmentation of HCl near the chlorine $L_{2,3}$ **ionization threshold: New evidence of a strong ultrafast dissociation channel.**
J. Phys. B 41, 145102 (2008)

hν **+ HCl**	Photodissociation	195−260 eV	Exp
hν **+ HCl**	Photoionization	195−260 eV	Exp

981. D. A. Shaw, D.M.P. Holland
The influence of Rydberg states on the photodissociation of nitrous oxide.
J. Phys. B 41, 145103 (2008)

hν **+ NO**	Total Absorption, Scattering	13−21 eV	Exp
hν **+ NO**	Photodissociation	13−21 eV	Exp

982. M. Abu-samha, L. B. Madsen
From multiphoton to tunnelling ionization of neon and argon.
J. Phys. B 41, 151001 (2008)

hν **+ Ne**	Photoionization	800−400 nm	Th
hν **+ Ar**	Photoionization	800−400 nm	Th

983. A. E. Kingston, A. Hibbert
Transitions from the $3p^6$ **4s state of Ti IV.**
J. Phys. B 41, 155001 (2008)

hν **+ Ti**$^{5+}$	Photoexcitation	10^{-4}-1 (unitless)	Th

984. D.-S. Kim, Y. S. Kim
Theoretical photoionization spectra in the UV photon energy range for a Mg-like Al^+ **ion.**
J. Phys. B 41, 165002 (2008)

hν **+ Al**$^+$	Photoionization	20−50 eV	Th

985. P. Sheridan, M. Grimm, E. Sokell
Resonant triple-differential cross-section measurements on atomic strontium.
J. Phys. B 41, 165204 (2008)

hν **+ Sr**	Photoionization	25.26 eV	Exp

986. S. Fritzsche, A. N. Grum-Grzhimailo, E. V. Gryzlova, N. M. Kabachnik
Angular distributions and angular correlations in sequential two-photon double ionization of atoms.
J. Phys. B 41, 165601 (2008)

hν **+ Ne**	Photoionization	28−110 eV	Th
hν **+ Ar**	Photoionization	28−110 eV	Th
2hν **+ Ne**	Photoionization	28−110 eV	Th
2hν **+ Ar**	Photoionization	28−110 eV	Th

987. J. H. Bauer
Comparison of two forms of the S-matrix element of strong-field photoionization.
J. Phys. B 41, 185003 (2008)

hν + H	Photoionization	10^{-2}-10^{5} a.u.	Th
hν + H*	Photoionization	10^{-2}-10^{5} a.u.	Th

988. Y. Xiao, A. A. Senin, B. J. Ricconi, R. Kogler, C. J. Zhu, J. G. Eden
Molecular dissociation and nascent product state distributions detected with atomic wavepacket interferometry and parametric four-wave mixing: Rb_2 predissociation observed by quantum beating in Rb at 18.2 THz.
J. Phys. B 41, 185101 (2008)

hν + Rb_2	Photodissociation	750−785 nm	Exp
hν + Rb_2	Photoexcitation	750−785 nm	Exp

989. M. A. McCune, M. E. Madjet, H. S. Chakraborty
Unique role of orbital angular momentum in subshell-resolved photoionization of C_{60}.
J. Phys. B 41, 201003 (2008)

hν + C_{60}	Photoionization	50−290 eV	Th

990. M. Okunishi, R. Itaya, K. Shimada, G. Prumper, K. Ueda, M. Busuladzic, A. Gazibegovic-Busuladzic, D. B. Milosevic, W. Becker
Angle-resolved high-order above-threshold ionization spectra for N_2 and O_2: Measurements and the strong-field approximation.
J. Phys. B 41, 201004 (2008)

hν + N_2	Photoionization	800 nm	E/T
hν + O_2	Photoionization	800 nm	E/T

991. C. R. Calvert, T. Birkeland, R. B. King, I. D. Williams, J. F. McCann
Quantum chessboards in the deuterium molecular ion.
J. Phys. B 41, 205504 (2008)

hν + $D_2{}^{+}$	Photoexcitation	750 nm	Th

992. S. L. Haan, Z. S. Smith, K. N. Shomsky, P. W. Plantinga
Anticorrelated electrons from weak recollisions in nonsequential double ionization.
J. Phys. B 41, 211002 (2008)

hν + He	Photoionization	800−483 nm	Th

993. A. G. Kochur, I. D. Petrov, J. Schulz, P. Wernet
Term-dependent lifetime broadening effect on the 4d photoelectron spectrum of atomic thulium.
J. Phys. B 41, 215002 (2008)

hν + Tm	Photoionization	502.4 eV	E/T

994. G. Prumper, D. Rolles, H. Fukuzawa, X. J. Liu, Z. Pesic, I. Dumitriu, R. R. Lucchese, K. Ueda, N. Berrah
Measurements of molecular-frame Auger electron angular distributions at the CO C $1s^{-1}$ 2π* resonance with high energy resolution.
J. Phys. B 41, 215101 (2008)

hν + CO	Photoionization	287.4−287.66 eV	Exp

995. M. Patanen, J. Niskanen, M. Huttula, K. Jankala, S. Urpelainen, H. Aksela, S. Aksela
Strong molecular field effects in Auger decay of the potassium 2p core-hole state in molecular KCl, KBr and KI.
J. Phys. B 41, 215103 (2008)

hν + KCl	Photoionization	316.5−325 eV	Exp
hν + KI	Photoionization	316.5−325 eV	Exp
hν + KBr	Photoionization	316.5−325 eV	Exp

996. J. Gagnon, K. F. Lee, D. M. Rayner, P. B. Corkum, V. R. Bhardwaj
Coincidence imaging of polyatomic molecules via laser-induced Coulomb explosion.
J. Phys. B 41, 215104 (2008)

hν + CH_2Cl_2	Photodissociation	800 nm	Exp

997. P. Bolognesi, D. Toffoli, P. Decleva, V. Feyer, L. Pravica, L. Avaldi
The dipole and non-dipole parameters of the N K shell of the N_2 molecule up to 80 eV above threshold.
J. Phys. B 41, 221002 (2008)

hν + N_2	Photoionization	420−480 eV	Exp

998. S. Tauro, K. Liu
Anisotropies of photoelectron angular distribution in the vicinity of autoionization resonances.
J. Phys. B 41, 225001 (2008)

hν + I	Photoexcitation	9.48−9.86 eV	Exp
2hν + I	Photoexcitation	9.48−9.86 eV	Exp
hν + I	Photoionization	9.48−9.86 eV	Exp
2hν + I	Photoionization	9.48−9.86 eV	Exp

999. N. Kaya, A. I. Kobya, E. Tirasoglu, G. Apaydin
An L_{III} ($2P_{3/2}$) subshell absorption jump ratio and jump factor for bismuth.
J. Phys. B 41, 225003 (2008)

hν + Bi	Fluorescence	10.01−17.48 keV	Exp

1000. A. Azarm, H. L. Xu, Y. Kamali, J. Bernhardt, D. Song, A. Xia, Y. Teranishi, S. H. Lin, F. Kong, S. L. Chin
Direct observation of super-excited states in methane created by a femtosecond intense laser field.
J. Phys. B 41, 225601 (2008)

hν + CH_4	Photodissociation	800 nm	Exp
nhν + CH_4	Photodissociation	800 nm	Exp
hν + CH_4	Fluorescence	800 nm	Exp
nhν + CH_4	Fluorescence	800 nm	Exp
nhν + CH_4	Photoexcitation	800 nm	Exp
hν + CH_4	Photoionization	800 nm	Exp

1001. L. Gaynor, N. Murphy, P. Dunne, G. O'Sullivan
Extreme ultraviolet photoabsorption spectra of the Ce VI-Ce X isonuclear sequence.
J. Phys. B 41, 245002 (2008)

hν + Ce^{5+}	Total Absorption, Scattering	70−120 eV	Exp
hν + Ce^{6+}	Total Absorption, Scattering	70−120 eV	Exp
hν + Ce^{7+}	Total Absorption, Scattering	70−120 eV	Exp
hν + Ce^{8+}	Total Absorption, Scattering	70−120 eV	Exp
hν + Ce^{9+}	Total Absorption, Scattering	70−120 eV	Exp

1002. M. Ruszczak, M. Strojecki, M. Lukomski, J. Koperski
Potential energy curves for the $B^1 1_u$ state and short-range part of the $X^1 0_g{}^+$ state of Cd_2 determined from excitation and dispersed fluorescence spectra recorded using the $B^1 1_u \leftrightarrow X^1 0_g{}^+$ transition.
J. Phys. B 41, 245101 (2008)

hν + Cd_2	Fluorescence	220−230 nm	Exp
hν + Cd_2	Photoexcitation	220−230 nm	Exp

1003. T. Osawa, Y. Tohyama, S. Obara, T. Nagata, Y. Azuma, F. Koike
Photoabsorption and subsequent decay of Na and Mg atoms in the 2s-np autoionizing resonance region.
J. Phys. B 41, 245206 (2008)

hν + Na	Fluorescence	60−105 eV	Exp
hν + Mg	Fluorescence	60−105 eV	Exp
hν + Na	Photoexcitation	60−105 eV	Exp
hν + Mg	Photoexcitation	60−105 eV	Exp

1004. Q. Y. Zhang, J. W. Hepburn, M. Shapiro
Observation of above-threshold dissociation of $Na_2{}^+$ in intense laser fields.
Phys. Rev. A 78, 021403 (2008)

hν + $Na_2{}^+$	Photodissociation	800 nm	Exp
hν + $Na_2{}^+$	Photoionization	800 nm	Exp

1005. Y.-Y. Lee, T.-Y. Dung, R.-M. Hsieh, J.-Y. Yuh, Y.-F. Song, G. H. Ho, T.-P. Huang, W.-C. Pan, I.-C. Chen, S.-Y. Tu, A. H. Kung, L. C. Lee
Autoionizing Rydberg series (np', nf') of Ar investigated by stepwise excitations with lasers and synchrotron radiation.
Phys. Rev. A 78, 022509 (2008)

hν + Ar	Photoexcitation	6−120 eV	Exp
hν + Ar	Photoionization	6−120 eV	Exp

1006. T. Tanaka, R. Feifel, M. Kitajima, H. Tanaka, S. L. Sorensen, R. Sankari, A. De Fanis, M.-N. Piancastelli, L. Karlsson, K. Ueda
Symmetry-resolved x-ray absorption fine structure and resonant Auger-spectator-electron decay study of O 1s -¿ Rydberg resonances in O_2.
Phys. Rev. A 78, 122516 (2008)

hν + O_2	Photoexcitation	540−543 eV	Th
hν + O_2	Photoionization	540−543 eV	Th

1007. F. L. Yip, C. W. McCurdy, T. N. Rescigno
Hybrid Gaussian-discrete-variable representation approach to molecular continuum processes: Application to photoionization of diatomic $Li_2{}^+$.
Phys. Rev. A 78, 023405 (2008)

hν + $Li_2{}^+$	Photoionization	2−20 eV	Th

1008. C. Sarkar, R. Bhattacharya, S. S. Bhattacharyya, S. Saha
Control of population transfer in a multilevel Li_2 molecule by stimulated hyper-Raman nonadiabatic passage with chirped laser pulses.
Phys. Rev. A 78, 023406 (2008)

hν + Li_2	Photoexcitation	992−1028 nm	Th

1009. K. Krajewska, I. I. Fabrikant, A. F. Starace
Threshold effects on plateau electron angular distributions in above-threshold detachment.
Phys. Rev. A 78, 023407 (2008)

hν + H^-	Photodetachment	0.0043−0.0253 a.u.	Th
hν + F^-	Photodetachment	0.0043−0.0253 a.u.	Th

1010. E. Andersson, M. Stenrup, J.H.D. Eland, L. Hedin, M. Berglund, L. Karlsson, A. Larson, H. Agren, J.-E. Rubensson, R. Feifel
Single-photon core-valence double ionization of molecular oxygen.
Phys. Rev. A 78, 023409 (2008)

hν + O_2	Photoionization	605−650 eV	Exp

1011. M. Vafaee
Nuclear kinetic energy spectra of $D_2{}^+$ in an intense laser field: Beyond the Born-Oppenheimer approximation.
Phys. Rev. A 78, 023410 (2008)

hν + $H_2{}^+$	Photodissociation	800 nm	E/T
hν + $D_2{}^+$	Photodissociation	800 nm	E/T

1012. A. Emmanouilidou
Recoil collisions as a portal to field-assisted ionization at near-uv frequencies in the strong-field double ionization of helium.
Phys. Rev. A 78, 023411 (2008)

hν + He	Photoionization	0.055−0.187 a.u.	Th

1013. D. Mathur, F. A. Rajgara, A. K. Dharmadhikari, J. A. Dharmadhikari
Strong-field ionization of water by intense few-cycle laser pulses.
Phys. Rev. A 78, 023414 (2008)

hν + H_2O	Photodissociation	800 nm	Exp
hν + H_2O	Photoionization	800 nm	Exp

1014. P. Antoine, E. Foumouo, B. Piraux, T. Shimizu, H. Hasegawa, Y. Nabekawa, K. Midorikawa
Two-photon double ionization of helium: An experimental lower bound of the total cross section.
Phys. Rev. A 78, 023415 (2008)

hν + He	Photoionization	41.8 eV	E/T

1015. J. Bengtsson, E. Lindroth, S. Selsto
Solution of the time-dependent Schrodinger equation using uniform complex scaling.
Phys. Rev. A 78, 032502 (2008)

hν + H	Photoionization	0.6−2 ω(a.u.)	Th

1016. M. F. Hasoglu, D. Nikolic, T. W. Gorczyca, S. T. Manson, M. H. Chen, N. R. Badnell
Nonmonotonic behavior as a function of nuclear charge of the K-shell Auger and radiative rates and fluorescence yields along the $1s2s^22p^3$ isoelectronic sequence.
Phys. Rev. A 78, 032509 (2008)

hν + C	Fluorescence		Th
hν + N^+	Fluorescence		Th
hν + O^{2+}	Fluorescence		Th
hν + F^{3+}	Fluorescence		Th
hν + Ne^{4+}	Fluorescence		Th
hν + Na^{5+}	Fluorescence		Th
hν + Mg^{6+}	Fluorescence		Th
hν + Al^{7+}	Fluorescence		Th
hν + Si^{8+}	Fluorescence		Th
hν + P^{9+}	Fluorescence		Th
hν + S^{10+}	Fluorescence		Th
hν + Cl^{11+}	Fluorescence		Th
hν + Ar^{12+}	Fluorescence		Th
hν + K^{13+}	Fluorescence		Th
hν + Ca^{14+}	Fluorescence		Th
hν + Sc^{15+}	Fluorescence		Th
hν + Ti^{16+}	Fluorescence		Th
hν + V^{17+}	Fluorescence		Th
hν + Cr^{18+}	Fluorescence		Th
hν + Mn^{19+}	Fluorescence		Th
hν + Fe^{20+}	Fluorescence		Th
hν + Co^{21+}	Fluorescence		Th
hν + Ni^{22+}	Fluorescence		Th
hν + Cu^{23+}	Fluorescence		Th
hν + Zn^{24+}	Fluorescence		Th

1017. S. Fritzsche, K. Jankala, M. Huttula, S. Urpelainen, H. Aksela
Photoelectron satellite structure from the 3d and 4d inner-shell ionization of rubidium and cesium: Role of atomic relaxation.
Phys. Rev. A 78, 032514 (2008)

hν + Rb	Photoionization	134−220 eV	E/T
hν + Cs	Photoionization	134−220 eV	E/T

1018. M. A. Baig, S. Mahmood, R. Mumtaz, M. Rafiq, M. A. Kalyar, S. Hussain, R. Ali
Oscillator strength measurements of the $3p^5(^2P_{1/2})$ nd'[3/2]$_2$ and [5/2]$_{2,3}$ autoionizing resonances in argon.
Phys. Rev. A 78, 032524 (2008)

hν + Ar	Photoexcitation	491−467 nm	Exp

1019. P. N. Juranic, R. Wehlitz
Triple photoionization of lithium up to 650 eV photon energy.
Phys. Rev. A 78, 033401 (2008)

hν + Li	Photoionization	200−650 eV	Exp

1020. M. Busuladzic, A. Gazibegovic-Busuladzic, D. B. Milosevic, W. Becker
Strong-field approximation for ionization of a diatomic molecule by a strong laser field. II. The role of electron rescattering off the molecular centers.
Phys. Rev. A 78, 033412 (2008)

hν + N_2	Photoionization	3−4×10^{14} W/cm^2	Th
hν + O_2	Photoionization	3−4×10^{14} W/cm^2	Th

1021. Y. Namito, S. Ban, H. Hirayama
Azimuthal-angle dependence of L X-ray intensity following photoionization of Pb, Au, and W atoms by a linearly polarized photon.
Phys. Rev. A 78, 033419 (2008)

hν + W	Photoionization	11−40 keV	Exp
hν + Au	Photoionization	11−40 keV	Exp
hν + Pb	Photoionization	11−40 keV	Exp

1022. M. Kitajima, R. Puettner, S. L. Sorensen, T. Tanaka, M. Hoshino, H. Fukuzawa, A. De Fanis, Y. Tamenori, R. Sankari, M. N. Piancastelli, H. Tanaka, K. Ueda
Angle-resolved photoion yield and resonant Auger spectroscopy for the doubly excited Rydberg states above the C 1s threshold of CO.
Phys. Rev. A 78, 033422 (2008)

hν + CO	Photoionization	300−305 eV	Exp

1023. R. Wehlitz, P. N. Juranic, D. V. Lukic
Double photoionization of magnesium from threshold to 54 eV photon energy.
Phys. Rev. A 78, 033428 (2008)

hν + Mg	Photoionization	22−54 eV	Exp

1024. B. Gaire, J. McKenna, A. M. Sayler, N. G. Johnson, E. Parke, K. D. Carnes, B. D. Esry, I. Ben-Itzhak
High kinetic energy release upon dissociation of ionization of an $N_2{}^+$ beam by intense few-cycle laser pulses.
Phys. Rev. A 78, 033430 (2008)

hν + $N_2{}^+$	Photodissociation	790 nm	Exp
hν + $N_2{}^+$	Photoionization	790 nm	Exp

1025. Z. Zhai, R.-F. Yu, X.-S. Liu, Y.-J. Yang
Enhancement of high-order harmonic emission and intense sub-50-as pulse generation.
Phys. Rev. A 78, 041402 (2008)

hν + CO_2	Photoionization	795 nm	Exp
hν + N_2	Photoionization	795 nm	Exp
hν + C_3H_4	Photoionization	795 nm	Exp
nhν + CO_2	Photoionization	795 nm	Exp
nhν + N_2	Photoionization	795 nm	Exp
nhν + C_3H_4	Photoionization	795 nm	Exp

1026. M. G. Su, C. Z. Dong, N. Murphy, G. O'Sullivan, P. Hayden, J. White
Theoretical analysis of xuv photoabsorption spectra of laser-produced iodine plasmas.
Phys. Rev. A 78, 043401 (2008)

hν + I^{2+}	Total Absorption, Scattering	65−130 eV	E/T
hν + I^{3+}	Total Absorption, Scattering	65−130 eV	E/T
hν + I^{4+}	Total Absorption, Scattering	65−130 eV	E/T

1027. D. A. Horner, C. W. McCurdy, T. N. Rescigno
Triple differential cross sections and nuclear recoil in two-photon double ionization of helium.
Phys. Rev. A 78, 043416 (2008)

hν + He	Photoionization	42−58 eV	Th
2hν + He	Photoionization	42−58 eV	Th

1028. Ph. V. Demekhin, S. Scheit, S. D. Stoychev, L. S. Cederbaum
Dynamics of interatomic Coulombic decay in a Ne dimer following the $K-L_1L_{2,3}(^1P)$ Auger transition in the Ne atom.
Phys. Rev. A 78, 043421 (2008)

hν + Ne_2	Photodissociation	871 eV	Th
hν + Ne_2	Photoionization	871 eV	Th

1029. K. Kreidi, T. Jahnke, Th. Weber, T. Havermeier, X. Liu, Y. Morisita, S. Schoessler, L.Ph.H. Schmidt, M. Schoeffler, M. Odenweller, N. Neumann, L. Foucar, J. Titze, B. Ulrich, F. Sturm, C. Stuck, R. Wallauer, S. Voss, I. Lauter, H. K. Kim, M. Rudloff, H. Fukuzawa, G. Pruemper, N. Saito, K. Ueda, A. Czasch, O. Jagutzki, H. Schmidt-Boecking, S. Stoychev, Ph. V. Demekhin, R. Doerner
Relaxation processes following 1s photoionization and Auger decay in Ne_2.
Phys. Rev. A 78, 043422 (2008)

hν + Ne_2	Photodissociation	880.2 eV	Exp
hν + Ne_2	Photoionization	880.2 eV	Exp

1030. P. Bogdanovich, R. Karpuskiene
Ab initio oscillator strengths and transition probabilities in oxygen-like Cr XVII.
At. Data Nucl. Data Tables 94, 623 (2008)

hν + Cr^{16+}	Photoexcitation	10^{-6}-10^{1} (unitless)	Th

1031. L. Hao, G. Jiang, S. Song, F. Hu
Relativistic multi-configuration calculations of $K\alpha$ and $K\beta$ X-ray transitions for highly ionized Mo ions.
At. Data Nucl. Data Tables 94, 739 (2008)

hν + Mo^{32+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th
hν + Mo^{33+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th
hν + Mo^{34+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th
hν + Mo^{35+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th
hν + Mo^{36+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th
hν + Mo^{37+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th
hν + Mo^{38+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th
hν + Mo^{39+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th
hν + Mo^{40+}	Photoexcitation	10^{-7}-10^{1} (unitless)	Th

1032. L. Argenti
Rydberg and autoionizing triplet states in helium up to the N = 5 threshold.
At. Data Nucl. Data Tables 94, 903 (2008)

hν + He	Photoexcitation	10^{-6}-1 a.u.	Th

1033. K. Alioua, M. Bouledroua, A. R. Allouche, M. Aubert-Frecon
Far-wing profile of photoabsorption spectra of Na(3s-ep) atoms perturbed by helium.
J. Phys. B 41, 175102 (2008)

hν + Na	Total Absorption, Scattering	528 nm	E/T
hν + Na*	Total Absorption, Scattering	528 nm	E/T

1034. Z. D. Pesic, D. Rolles, R. C. Bilodeau, I. Dimitriu, N. Berrah
Three-body fragmentation of $CO_2{}^{2+}$ upon K-shell photoionization.
Phys. Rev. A 78, 051401 (2008)

hν + CO_2	Photodissociation	535 eV	E/T

1035. J. L. Glover, C. T. Chantler, Z. Barnea, N. A. Rae, C. Q. Tran, D. C. Creagh, D. Paterson, B. B. Dhal
Measurements of the x-ray mass-attenuation coefficient and imaginary component of the form factor of copper.
Phys. Rev. A 78, 052902 (2008)

hν + Cu	Total Absorption, Scattering	5−20 keV	E/T

1036. A. M. Sossah, H. L. Zhou, S. T. Manson
Photoionization of doubly-charged scandium ions.
Phys. Rev. A 78, 053405 (2008)

hν + Sc^{2+}	Photoionization	25−60 eV	Th

1037. X.-B. Bian, L.-Y. Peng, T.-Y. Shi
Ionization dynamics of linear molecular ion $H_3{}^{2+}$ in dc and low-frequency laser fields.
Phys. Rev. A 78, 053408 (2008)

hν + $H_3{}^+$	Photoionization	0.0533 a.u. − 1064 nm	Th

1038. J. L. Sanz-Vicario, J. C. Cardona, E. Lindroth
Outer-shell photodetachment of the metastable Mg^- [core]$3s3p^2$ and Ca^- [core]$4s4p^2$ $^4P^e$ states.
Phys. Rev. A 78, 053411 (2008)

hν + Mg^-	Photodetachment	0−10 eV	Th
hν + Ca^-	Photodetachment	0−10 eV	Th

1039. P. Lambropoulos, L.A.A. Nikolopoulos, M. G. Makris, A. Mihelic
Direct versus sequential double ionization in atomic systems.
Phys. Rev. A 78, 055402 (2008)

hν + He	Photoionization	54.4 eV	Th

1040. J. J. Hua, B. D. Esry
Isotopic pulse-length scaling of molecular dissociation in an intense laser field.
Phys. Rev. A 78, 055403 (2008)

hν + $H_2{}^+$	Photodissociation	800 nm	E/T
hν + $D_2{}^+$	Photodissociation	800 nm	E/T

1041. B. Duan, M. A. Bari, J. Y. Zhong, J. Yan, Y. M. Li, J. Zhang
Energy levels and radiative rates for optically allowed and forbidden transitions of Ni XXV ion.
Astron. Astrophys. 488, 1155 (2008)

hν + Ni^{24+}	Photoexcitation	200 $\mathring{A}$	Th

1042. H. Nilsson, S. Ivarsson
Experimental oscillator strengths and hyperfine constants in Nb II.
Astron. Astrophys. 492, 609 (2008)

hν + Nb^{+}	Photoexcitation	4600−2600 Å	Exp

1043. P. Quinet, V. Fivet, P. Palmeri, E. Biemont, L. Engstrom, H. Lundberg, H. Nilsson
Branching fractions and A values in singly ionized tantalum (Ta II).
Astron. Astrophys. 493, 711 (2008)

hν + Ta^{+}	Photoexcitation	40,000 cm^{-1}	E/T

1044. R. Warmbier, R. Schneider, A. R. Sharma, B. J. Braams, J. M. Bowman, P. H. Hauschildt
Ab initio modeling of molecular IR spectra of astrophysical interest: Application to CH_4.
Astron. Astrophys. 495, 655 (2009)

hν + CH_4	Photoexcitation	0−9000 K	Th

1045. J. Melendez, B. Barbuy
Both accurate and precise gf-values for Fe II lines.
Astron. Astrophys. 497, 611 (2009)

hν + Fe^{+}	Photoexcitation	8000−4000 Å	Th

1046. C. Lavin, A. M. Velasco, I. Martin
Oscillator strength distribution in the discrete and continuum regions of the spectrum of CH molecule (oscillator strength distribution of CH).
Astrophys. J. 692, 1354 (2009)

hν + CH	Photoexcitation	1300 Å	Th

1047. B. Reed, C.-S. Lam, Y.-C. Chang, X. Xing, D.-S. Yang, C. Y. Ng
A high-resolution photoionization study of ^{56}Fe using a vacuum ultraviolet laser.
Astrophys. J. 693, 940 (2009)

hν + Fe	Photoionization	63,000−74,700 cm^{-1}	Exp

1048. A. Graf, P. Beiersdofer, G. V. Brown, M. F. Gu
Measurement and modeling of Na-like Fe XVI inner-shell satellites between 14.5 Å and 18 Å.
Astrophys. J. 695, 818 (2009)

hν + Fe^{15+}	Photoexcitation	18.0−14.5 Å	E/T

1049. G. Y. Liang, T. M. Baumann, J. R. Crespo Lopez-Urrutia, S. W. Epp, H. Tawara, A. Gonchar, P. H. Mokler, G. Zhao, J. Ullrich
Extreme-ultraviolet spectroscopy of Fe VI-Fe XV and its diagnostic application for electron beam ion trap plasmas.
Astrophys. J. 696, 2275 (2009)

hν + Fe^{5+}	Photoexcitation	265.0−125.0 Å	Exp
hν + Fe^{6+}	Photoexcitation	265.0−125.0 Å	Exp
hν + Fe^{7+}	Photoexcitation	265.0−125.0 Å	Exp
hν + Fe^{8+}	Photoexcitation	265.0−125.0 Å	Exp
hν + Fe^{9+}	Photoexcitation	265.0−125.0 Å	Exp
hν + Fe^{10+}	Photoexcitation	265.0−125.0 Å	Exp
hν + Fe^{11+}	Photoexcitation	265.0−125.0 Å	Exp
hν + Fe^{12+}	Photoexcitation	265.0−125.0 Å	Exp
hν + Fe^{13+}	Photoexcitation	265.0−125.0 Å	Exp

1050. P. Hlavenka, R. Otto, S. Trippel, J. Mikosch, M. Weidemueller, R. Wester
Absolute photodetachment cross section measurements of the O^- and OH^- anion.
J. Chem. Phys. 130, 061105 (2009)

hν + O^-	Photodetachment	600 nm	Exp
hν + OH^-	Photodetachment	600 nm	Exp

1051. S. F. Adams, C. A. DeJoseph Jr., J. M. Williamson
Formation and electron-ion recombination of $N_4{}^+$ following photoionization in near-atmospheric pressure N_2.
J. Chem. Phys. 130, 144316 (2009)

hν + N_2	Photoionization	290−275 nm	Exp

1052. V. Lepere, Y. J. Picard, M. Barat, J. A. Fayeton, B. Lucas, K. Beroff
Photodissociation dynamics of $Ar_2{}^+$ and $Ar_3{}^+$ excited by 527 nm photons.
J. Chem. Phys. 130, 194301 (2009)

hν + $Ar_2{}^+$	Photodissociation	2.35 eV	Exp
hν + $Ar_3{}^+$	Photodissociation	2.35 eV	Exp

1053. M. Lebech, J.-C. Houver, D. Dowek
Valence and inner-valence shell dissociative photoionization of CO in the 26-33 eV range. I. Ion-electron kinetic energy correlation and laboratory frame photoemission.
J. Chem. Phys. 130, 194307 (2009)

hν + CO	Photodissociation	22−33 eV	Exp
hν + CO	Photoionization	22−33 eV	Exp

1054. S. Mahata, S. K. Bhattacharya
Anomalous enrichment of ^{17}O and ^{13}C in photodissociation products of CO_2: Possible role of nuclear spin.
J. Chem. Phys. 130, 234312 (2009)

hν + CO_2	Photodissociation	184.9−116.5 nm	E/T

1055. J. Plenge, A. Wirsing, C. Raschpichler, M. Meyer, E. Ruehl
Chirped pulse multiphoton ionization of nitrogen: Control of selective rotational excitation in $N_2{}^+$ (B $^2\Sigma_u{}^+$).
J. Chem. Phys. 130, 244313 (2009)

hν + N_2	Fluorescence	804 nm	Exp
hν + N_2	Photoexcitation	804 nm	Exp
hν + N_2	Photoionization	804 nm	Exp

1056. A. M. Velasco, C. Lavin, I. Martin, J. Melin, J. V. Ortiz
Partial photoionization cross sections of NH_4 and H_3O Rydberg radicals.
J. Chem. Phys. 131, 024104 (2009)

hν + H_3O	Photoionization	0−50 eV	Th
hν + NH_4	Photoionization	0−50 eV	Th

1057. I. Han, L. Demir
Determination of mass attenuation coefficients, effective atomic and electron numbers for Cr, Fe and Ni alloys at different energies.
Nucl. Instrum. Methods Phys. Res. B 267, 3 (2009)

hν + Cr	Total Absorption, Scattering	22−88 keV	Exp
hν + Fe	Total Absorption, Scattering	22−88 keV	Exp
hν + Ni	Total Absorption, Scattering	22−88 keV	Exp

1058. I. L. Glukhov, V. D. Ovsiannikov
Thermal ionization of Cs Rydberg states.
Nucl. Instrum. Methods Phys. Res. B 267, 310 (2009)

hν + Cs	Photoionization		Th
hν + Cs*	Photoionization		Th

1059. D. G. Arbo, E. Persson, K. I. Dimitriou, J. Burgdorfer
Carrier-envelope phase dependence in atomic ionization by short-laser pulses.
Nucl. Instrum. Methods Phys. Res. B 267, 330 (2009)

hν + H	Photoionization		Exp
hν + Ar	Photoionization		Exp

1060. V. D. Rodriguez, P. A. Macri, D. G. Arbo
Resonant-enhanced above-threshold ionization of atoms by XUV short laser pulses.
Nucl. Instrum. Methods Phys. Res. B 267, 334 (2009)

hν + H	Photoionization		Th

1061. S. S. Kumar, P. C. Deshmukh, R. K. Kushawaha, V. Sharma, I. A. Prajapati, K. P. Subramanian, B. Bapat
Breakup of the $SF_6{}^{3+}$ photoion revealed by momentum correlation between fragments.
Phys. Rev. A 78, 062706 (2008)

hν + SF$_6$	Photodissociation	170−231 eV	Exp
hν + SF$_6$	Photoionization	170−231 eV	Exp

1062. H. Zhang, D. Rolles, Z. D. Pesic, J. D. Bozek, N. Berrah
Angular distributions of inner-shell photoelectrons from rare-gas clusters.
Phys. Rev. A 78, 063201 (2008)

hν + Ar	Photoionization	150−280 eV	Exp
hν + Kr	Photoionization	150−280 eV	Exp
hν + Xe	Photoionization	150−280 eV	Exp
hν + Ar$_{70}$	Photoionization	150−280 eV	Exp
hν + Ar$_{77}$	Photoionization	150−280 eV	Exp
hν + Ar$_{230}$	Photoionization	150−280 eV	Exp
hν + Ar$_{250}$	Photoionization	150−280 eV	Exp
hν + Kr$_{66}$	Photoionization	150−280 eV	Exp
hν + Kr$_{70}$	Photoionization	150−280 eV	Exp
hν + Kr$_{230}$	Photoionization	150−280 eV	Exp
hν + Kr$_{251}$	Photoionization	150−280 eV	Exp
hν + Xe$_{270}$	Photoionization	150−280 eV	Exp

1063. D. Toffoli, P. Decleva
Nondipolar effects in the photoionization dynamics of carbon tetrafluoride.
Phys. Rev. A 78, 063402 (2008)

hν + CF$_4$	Photoionization	20−120 eV	Th

1064. V. V. Serov, V. L. Derbov, B. B. Joulakian, S. I. Vinitsky
Charge-scaling law for angular correlation in double photoionization of ions and atoms with two active electrons.
Phys. Rev. A 78, 063403 (2008)

hν + H^-	Photoionization	20−400 eV	Th
hν + He	Photoionization	20−400 eV	Th
hν + Li	Photoionization	20−400 eV	Th
hν + Be	Photoionization	20−400 eV	Th
hν + Be^{2+}	Photoionization	20−400 eV	Th

1065. K. Rui, G. Yang
Photodetachment of H^- near a metal surface.
Surf. Sci. 603, 632 (2009)

hν + H^-	Photodetachment	0.75−1.5 eV	Th

1066. M. Aldenius, H. Lundberg, R. Blackwell-Whitehead
Experimental Ca I oscillator strengths for the 4p-5s triplet.
Astron. Astrophys. 502, 989 (2009)

hν + Ca	Photoexcitation	6100 $\AA$	Exp

1067. M. Brown, S. R. Federman, R. E. Irving, S. Cheng, L. J. Curtis
Lifetimes and oscillator strengths for ultraviolet transitions in singly ionized copper.
Astrophys. J., Part 1 702, 880 (2009)

hν + Cu^+	Photoexcitation	1358 $\AA$	Exp

1068. K. Yuan, L. Cheng, Y. Cheng, Q. Guo, D. Dai, X. Yang
Two-photon photodissociation dynamics of H_2O via the Dtilde electronic state.
J. Chem. Phys. 131, 074301 (2009)

hν + H_2O	Photodissociation	244 nm	Exp

1069. T. Kaneyasu, Y. Hikosaka, E. Shigemasa, P. Lablanquie, F. Penent, K. Ito
Auger decays of 1s shake-up and shake-off states in N_2 molecules.
J. Phys. B 41, 135101 (2008)

hν + N_2	Photoionization	510 eV	Exp

1070. K. G. Whitney, C. S. Chang
Calculations of hydrogen atom multiphoton energy level shifts, transition amplitudes and ionization probabilities.
J. Phys. B 41, 135602 (2008)

hν + H	Photoionization	238−244 nm	Th
nhν + H	Photoionization	238−244 nm	Th

1071. L. Ishikawa, T. Odagiri, K. Yachi, T. Nakazato, M. Kurokawa, M. Kitajima, N. Kouchi
Doubly excited states of ammonia produced by photon and electron interactions.
J. Phys. B 41, 195204 (2008)

hν + NH_3	Photodissociation	100 eV; 15−60 eV	E/T
hν + NH_3	Photoexcitation	100 eV; 15−60 eV	E/T

1072. S. Fritzsche, A. N. Grum-Grzhimailo, E. V. Gryzlova, N. M. Kabachnik
Angular distributions and angular correlations in sequential two-photon double ionization of atoms.
J. Phys. B 41, 199801 (2008)

hν + Ar	Photoionization	30−90 eV	Th
nhν + Ar	Photoionization	30−90 eV	Th

1073. V. Sharma, S. S. Kumar, D. Mehta, N. Singh
L-subshell vacancy decay processes for elements with 52¡Z¡57 following ionization using Mn $K\alpha$ x rays.
Phys. Rev. A 78, 012507 (2008)

hν + Te	Photoionization	5.888−5.899 keV	Exp
hν + I	Photoionization	5.888−5.899 keV	Exp
hν + Cs	Photoionization	5.888−5.899 keV	Exp
hν + Ba	Photoionization	5.888−5.899 keV	Exp
hν + La	Photoionization	5.888−5.899 keV	Exp

1074. H. S. Chakraborty, M. E. Madjet, J.-M. Rost, S. T. Manson
Dynamical effects of confinement on atomic valence photoionization in Mg @ C_{60}.
Phys. Rev. A 78, 013201 (2008)

hν + MgC_{60}	Photoionization	6−50 eV	Th

1075. D. Mathur, A. K. Dharmadhikari, F. A. Rajgara, J. A. Dharmadhikari
Molecular symmetry effects in the ionization of CS_2 by intense few-cycle laser pulses.
Phys. Rev. A 78, 013405 (2008)

hν + CS_2	Photodissociation	800 nm	Exp
hν + CS_2	Photoionization	800 nm	Exp

1076. D. G. Arbo, K. I. Dimitriou, E. Persson, J. Burgdorfer
Sub-Poissonian angular momentum distribution near threshold in atomic ionization by short laser pulses.
Phys. Rev. A 78, 013406 (2008)

hν + H	Photoionization	0.03−0.1 a.u.	Th
hν + Ar	Photoionization	0.03−0.1 a.u.	Th

1077. S. Baier, A. Becker, L. Plaja
Nonsequential double ionization of the hydrogen molecule: Dependence on molecular alignment.
Phys. Rev. A 78, 013409 (2008)

hν + H_2	Photoionization	10^{14}-10^{15} W/cm^2	Th

1078. J.-T. Hsiao, L.-R. Wang, H.-L. Sun, S.-F. Lin, C.-L. Lu, K.-N. Huang
Photoionization processes of the beryllium atom.
Phys. Rev. A 78, 013411 (2008)

hν + Be	Photoionization	9−14 eV	Th

1079. Y. Ni, S. Zamith, F. Lepine, T. Martchenko, M. Kling, O. Ghafur, H. G. Muller, G. Berden, F. Robicheaux, M.J.J. Vrakking
Above-threshold ionization in a strong dc electric field.
Phys. Rev. A 78, 013413 (2008)

hν + Xe	Photoionization	108 μ m	Exp

1080. M. S. Schoeffler, K. Kreidi, D. Akoury, T. Jahnke, A. Staudte, N. Neumann, J. Titze, L.Ph.H. Schmidt, A. Czasch, O. Jagutzki, R. A. Costa Fraga, R. E. Grisenti, M. Smolarski, P. Ranitovic, C. L. Cocke, T. Osipov, H. Adaniya, S. Lee, J. C. Thompson, M. H. Prior, A. Belkacem, Th. Weber, A. Landers, H. Schmidt-Boecking, R. Doerner
Photo-double-ionization of H_2: Two-center interference and its dependence on the internuclear distance.
Phys. Rev. A 78, 013414 (2008)

hν + H$_2$	Photoionization	160 eV	Exp

1081. V. K. Dolmatov, P. Brewer, S. T. Manson
Photoionization of atoms confined in giant single-walled and multiwalled fullerenes.
Phys. Rev. A 78, 013415 (2008)

hν + ArC$_{60}$	Photoionization	3220−3290 eV	Th
hν + ArC$_{240}$	Photoionization	3220−3290 eV	Th
hν + ArC$_{540}$	Photoionization	3220−3290 eV	Th

1082. A. Rudenko, Th. Ergler, K. Zrost, B. Feuerstein, V.L.B. de Jesus, C. D. Schroeter, R. Moshammer, J. Ullrich
Intensity-dependent transitions between different pathways of strong-field double ionization.
Phys. Rev. A 78, 015403 (2008)

hν + Ne	Photoionization	10^{14}-3×10^{15} W/cm^2	Exp
hν + Ar	Photoionization	10^{14}-3×10^{15} W/cm^2	Exp

3.2.2 Electron Collisions

1083. B. Bapat, V. Sharma
Bent dissociative states of ${CO_2}^{2+}$.
J. Phys. B 40, 13 (2007)

e + ${CO_2}^{2+}$	Dissociation	1300 eV	Exp

1084. J. Lecointre, D. S. Belic, J. J. Jureta, K. Becker, H. Deutsch, J. Limtrakul, T. D. Maerk, M. Probst, P. Defrance
Absolute cross sections and kinetic energy release for doubly and triply charged fragments produced by electron impact on CO^+.
J. Phys. B 40, 85 (2007)

e + CO^+	Dissociation	15−2500 eV	E/T
e + CO^+	Ionization	15−2500 eV	E/T

1085. S. Zivanov, B. C. Ibanescu, M. Paech, M. Poffet, P. Baettig, A.-C. Sergenton, S. Grimme, M. Allan
Dissociative electron attachment and electron energy-loss spectra of phenyl azide.
J. Phys. B 40, 101 (2007)

e + $C_6H_5N_3$	Dissociation	3−12 eV	E/T
e + $C_6H_5N_3$	Electron Collisions	3−12 eV	E/T

1086. B. Najjari, N. Lahmidi, A. Dorn, B. Joulakian
Multiply differential cross section for the total (e, 3e) K-shell vacancy creation of lithium by electron impact.
J. Phys. B 40, 157 (2007)

e + Li	Angular Scattering	2 keV	Th
e + Li	Ionization	2 keV	Th

1087. K. N. Joshipura, S. Gangopadhyay, B. G. Vaishnav
Electron scattering and ionization of NO, N_2O, NO_2, NO_3 and N_2O_5 molecules: Theoretical cross sections.
J. Phys. B 40, 199 (2007)

e + NO	Elastic Scattering	10−2000 eV	Th
e + N_2O	Elastic Scattering	10−2000 eV	Th
e + NO_2	Elastic Scattering	10−2000 eV	Th
e + NO_3	Elastic Scattering	10−2000 eV	Th
e + N_2O_5	Elastic Scattering	10−2000 eV	Th
e + NO	Excitation	10−2000 eV	Th
e + N_2O	Excitation	10−2000 eV	Th
e + NO_2	Excitation	10−2000 eV	Th
e + NO_3	Excitation	10−2000 eV	Th
e + N_2O_5	Excitation	10−2000 eV	Th
e + NO	Ionization	10−2000 eV	Th
e + N_2O	Ionization	10−2000 eV	Th
e + NO_2	Ionization	10−2000 eV	Th
e + NO_3	Ionization	10−2000 eV	Th
e + N_2O_5	Ionization	10−2000 eV	Th

1088. C. P. Ballance, D. C. Griffin
Electron-impact excitation of W^{44+} and W^{45+}.
J. Phys. B 40, 247 (2007)

e + W^{44+}	Excitation	75−800 eV	Th
e + W^{45+}	Excitation	75−800 eV	Th

1089. B. Saha, S. Fritzsche
Influence of dense plasma on the low-lying transitions in Be-like ions: Relativistic multiconfiguration Dirac-Fock calculation.
J. Phys. B 40, 259 (2007)

e + O^{4+}	Excitation	200−1500 eV	Th
e + Ne^{6+}	Excitation	200−1500 eV	Th
e + Si^{10+}	Excitation	200−1500 eV	Th
e + Ar^{14+}	Excitation	200−1500 eV	Th
e + Fe^{22+}	Excitation	200−1500 eV	Th
e + Mo^{38+}	Excitation	200−1500 eV	Th

1090. C. P. Ballance, D. C. Griffin, M. S. Pindzola, S. D. Loch
Electron-impact ionization of argon using the R-matrix with a pseudo-states method.
J. Phys. B 40, F27 (2007)

e + Ar	Ionization	0−52 eV	Th

1091. V. Feyer, P. Bolognesi, M. Coreno, K. C. Prince, L. Avaldi, B. Jansik, V. Carravetta
The decay of the C 1s -¿ 2π $^3\Pi$ inner-shell excited state of CO.
J. Phys. B 40, F35 (2007)

e + CO	Excitation	256−276 eV	Exp
e + CO	Ionization	256−276 eV	Exp

1092. F. de Gaufridy de Dortan
Influence of configuration interaction on satellite lines of xenon and tin in the EUV region.
J. Phys. B 40, 599 (2007)

e + Sn^{4+}	Recombination	15−40 T(eV)	Th
e + Sn^{5+}	Recombination	15−40 T(eV)	Th
e + Sn^{6+}	Recombination	15−40 T(eV)	Th
e + Sn^{7+}	Recombination	15−40 T(eV)	Th
e + Sn^{8+}	Recombination	15−40 T(eV)	Th
e + Sn^{9+}	Recombination	15−40 T(eV)	Th
e + Sn^{10+}	Recombination	15−40 T(eV)	Th
e + Sn^{11+}	Recombination	15−40 T(eV)	Th
e + Sn^{12+}	Recombination	15−40 T(eV)	Th
e + Sn^{13+}	Recombination	15−40 T(eV)	Th
e + Xe^{8+}	Recombination	15−40 T(eV)	Th
e + Xe^{9+}	Recombination	15−40 T(eV)	Th
e + Xe^{10+}	Recombination	15−40 T(eV)	Th
e + Xe^{11+}	Recombination	15−40 T(eV)	Th
e + Xe^{12+}	Recombination	15−40 T(eV)	Th
e + Xe^{13+}	Recombination	15−40 T(eV)	Th
e + Sn^{4+}	Fluorescence	15−40 T(eV)	Th
e + Sn^{5+}	Fluorescence	15−40 T(eV)	Th
e + Sn^{6+}	Fluorescence	15−40 T(eV)	Th
e + Sn^{7+}	Fluorescence	15−40 T(eV)	Th
e + Sn^{8+}	Fluorescence	15−40 T(eV)	Th
e + Sn^{9+}	Fluorescence	15−40 T(eV)	Th
e + Sn^{10+}	Fluorescence	15−40 T(eV)	Th
e + Sn^{11+}	Fluorescence	15−40 T(eV)	Th
e + Sn^{12+}	Fluorescence	15−40 T(eV)	Th
e + Sn^{13+}	Fluorescence	15−40 T(eV)	Th
e + Xe^{8+}	Fluorescence	15−40 T(eV)	Th
e + Xe^{9+}	Fluorescence	15−40 T(eV)	Th
e + Xe^{10+}	Fluorescence	15−40 T(eV)	Th
e + Xe^{11+}	Fluorescence	15−40 T(eV)	Th
e + Xe^{12+}	Fluorescence	15−40 T(eV)	Th
e + Xe^{13+}	Fluorescence	15−40 T(eV)	Th
e + Sn^{4+}	Excitation	15−40 T(eV)	Th
e + Sn^{5+}	Excitation	15−40 T(eV)	Th
e + Sn^{6+}	Excitation	15−40 T(eV)	Th
e + Sn^{7+}	Excitation	15−40 T(eV)	Th
e + Sn^{8+}	Excitation	15−40 T(eV)	Th
e + Sn^{9+}	Excitation	15−40 T(eV)	Th
e + Sn^{10+}	Excitation	15−40 T(eV)	Th
e + Sn^{11+}	Excitation	15−40 T(eV)	Th
e + Sn^{12+}	Excitation	15−40 T(eV)	Th
e + Sn^{13+}	Excitation	15−40 T(eV)	Th
e + Xe^{8+}	Excitation	15−40 T(eV)	Th
e + Xe^{9+}	Excitation	15−40 T(eV)	Th
e + Xe^{10+}	Excitation	15−40 T(eV)	Th
e + Xe^{11+}	Excitation	15−40 T(eV)	Th
e + Xe^{12+}	Excitation	15−40 T(eV)	Th
e + Xe^{13+}	Excitation	15−40 T(eV)	Th

1093. K. Bartschat, O. Zatsarinny
B-Spline R-matrix calculations for the spin asymmetry function in electron-impact excitation of argon and krypton.

J. Phys. B 40, F43 (2007)

e + Ar	Angular Scattering	15−30 eV	Th
e + Kr	Angular Scattering	15−30 eV	Th
e + Ar	Excitation	15−30 eV	Th
e + Kr	Excitation	15−30 eV	Th

1094. M. Braun, I. I. Fabrikant, M.-W. Ruf, H. Hotop
Low-energy electron collisions with CH_3Br: The dependence of elastic scattering, vibrational excitation, and dissociative attachment on the initial vibrational energy.
J. Phys. B 40, 659 (2007)

e + CH_3Br	Attachment	1−180 MeV	Exp
e + CH_3Br^*	Attachment	1−180 MeV	Exp
e + CH_3Br	Dissociation	1−180 MeV	Exp
e + CH_3Br^*	Dissociation	1−180 MeV	Exp
e + CH_3Br	Elastic Scattering	1−180 MeV	Exp
e + CH_3Br^*	Elastic Scattering	1−180 MeV	Exp
e + CH_3Br	Excitation	1−180 MeV	Exp
e + CH_3Br^*	Excitation	1−180 MeV	Exp

1095. P. A. Thorn, M. J. Brunger, H. Kato, M. Hoshino, H. Tanaka
Cross sections for the electron impact excitation of the $\tilde{a}^3B_1$, $\tilde{b}^3A_1$ and $\tilde{B}^1A_1$ dissociative electronic states of water.
J. Phys. B 40, 697 (2007)

e + H_2O	Dissociation	20−50 eV	Exp
e + H_2O	Angular Scattering	20−50 eV	Exp
e + H_2O	Excitation	20−50 eV	Exp

1096. Y. Wu, Z. An, Y. M. Duan, M. T. Liu, C. H. Tang
Measurements of L_α, LL_β x-ray production cross sections of Pb by 16-40 keV electron impact.
J. Phys. B 40, 735 (2007)

e + Pb	Fluorescence	16−40 keV	Exp
e + Pb	Ionization	16−40 keV	Exp

1097. B. A. deHarak, Z. Chen, D. H. Madison, N.L.S. Martin
Experimental and theoretical momentum transfer dependence of the He (e, 2e) cross section for incident electron energies 150 eV and 488 eV.
J. Phys. B 40, 755 (2007)

e + He	Angular Scattering	150−488 eV	E/T
e + He	Ionization	150−488 eV	E/T

1098. I. Orban, E. Lindroth, P. Glans, R. Schuch
Spectroscopic study of doubly excited states in Mg-like Si using dielectronic recombination.
J. Phys. B 40, 1063 (2007)

e + Si^{3+}	Recombination	0−20 eV	E/T

1099. C. P. Ballance, D. C. Griffin, K. A. Berrington, N. R. Badnell
Electron-impact excitation of neutral boron using the R-matrix with the pseudostates method.
J. Phys. B 40, 1131 (2007)

e + B	Excitation	0.05−1.5 Ry	Th

1100. H. N. Varambhia, J. Tennyson
Electron collision with the HCN and HNC molecules using the R-matrix method.
J. Phys. B 40, 1211 (2007)

e + HCN	Excitation	6−10 eV	Th
e + HNC	Excitation	6−10 eV	Th

1101. D. Bouchiha, J. D. Gorfinkiel, L. G. Caron, L. Sanche
Low-energy electron collisions with methanol.
J. Phys. B 40, 1259 (2007)

e + CH_3OH	Elastic Scattering	0−12 eV	Th
e + CH_3OH	Excitation	0−12 eV	Th

1102. M. S. Pindzola, F. Robicheaux, S. D. Loch, J. C. Berengut, T. Topcu, J. Colgan, M. Foster, D. C. Griffin, C. P. Ballance, D. R. Schultz, T. Minami, N. R. Badnell, M. C. Witthoeft, D. R. Plante, D. M. Mitnik, J. A. Ludlow, U. Kleiman
The time-dependent close-coupling method for atomic and molecular collision processes.
J. Phys. B 40, R39 (2007)

e + H^-	Angular Scattering	1−160 eV	Th
e + H	Angular Scattering	1−160 eV	Th
e + H^*	Angular Scattering	1−160 eV	Th
e + He	Angular Scattering	1−160 eV	Th
e + $H_2{}^+$	Angular Scattering	1−160 eV	Th
e + H^-	Ionization	1−160 eV	Th
e + H	Ionization	1−160 eV	Th
e + H^*	Ionization	1−160 eV	Th
e + He	Ionization	1−160 eV	Th
e + $H_2{}^+$	Ionization	1−160 eV	Th

1103. S. A. Napier, D. Cvejanovic, J. F. Williams, L. Pravica
Negative ion resonances in the autoionizing region of zinc: Excitation of the $4s4p^3P_{0,1,2}$ states.
J. Phys. B 40, 1323 (2007)

e + Zn	Excitation	7−20 eV	Exp
e + Zn	Ionization	7−20 eV	Exp

1104. J. C. Berengut, S. D. Loch, C. P. Ballance, M. S. Pindzola
Electron-impact ionization of the metastable excited states of Li^+.
J. Phys. B 40, 1331 (2007)

e + Li^+	Ionization	15−100 eV	Th
e + Li^{+*}	Ionization	15−100 eV	Th

1105. V. Astapenko, N. Nasonov, P. Zhukova
Anomalous peak in the spectrum of polarizational bremsstrahlung from relativistic electrons moving through a solid target.
J. Phys. B 40, 1337 (2007)

e + Al	Bremsstrahlung	15 MeV	Th

1106. D. J. Haxton, C. W. McCurdy, T. N. Rescigno
Comment on 'A wave packet method for treating nuclear dynamics on complex potentials.'
J. Phys. B 40, 1461 (2007)

e + H_2O	Attachment	4−10 eV	Th
e + H_2O	Dissociation	4−10 eV	Th

1107. Y.-K. Kim, P. M. Stone
Ionization of silicon, germanium, tin and lead by electron impact.
J. Phys. B 40, 1597 (2007)

e + Si	Ionization	5−5000 eV	Th
e + Ge	Ionization	5−5000 eV	Th
e + Sn	Ionization	5−5000 eV	Th
e + Pb	Ionization	5−5000 eV	Th

1108. A. Chakraborty
High-magnetic-field-assisted scattering of electrons with atomic hydrogen.
J. Phys. B 40, 1627 (2007)

e + H	De-excitation	0−10 a.u.	Th
e + H^*	De-excitation	0−10 a.u.	Th
e + H	Elastic Scattering	0−10 a.u.	Th

1109. M. Stevenson, G. J. Leighton, A. Crowe, K. Bartschat, O. K. Vorov, D. H. Madison
Experimental and theoretical (e,2e) studies of argon (3p) ionization in asymmetric geometry.
J. Phys. B 40, 1639 (2007)

e + Ar	Angular Scattering	2−20 eV	E/T
e + Ar^*	Angular Scattering	2−20 eV	E/T
e + Ar	Ionization	2−20 eV	E/T
e + Ar^*	Ionization	2−20 eV	E/T

1110. M. A. Khakoo, S. Wang, R. Laher, P. V. Johnson, C. P. Malone, I. Kanik
Direct evidence for channel-coupling effects in molecules: Electron impact excitation of the a"$^1\Sigma_g{}^+$ state of N_2.
J. Phys. B 40, F167 (2007)

e + N_2	Angular Scattering	17.5−50 eV	Exp
e + N_2	Excitation	17.5−50 eV	Exp

1111. H. Munjal, K. L. Baluja
Electron-impact study of PH_3: An R-matrix approach.
J. Phys. B 40, 1713 (2007)

e + PH_3	Elastic Scattering	0.025−15 eV	Th

1112. B. Predojevic, V. Pejcev, D. M. Filipovic, D. Sevic, B. P. Marinkovic
Elastic electron scattering by a magnesium atom.
J. Phys. B 40, 1853 (2007)

e + Mg	Elastic Scattering	10−100 eV	Exp
e + Mg	Angular Scattering	10−100 eV	Exp

1113. Yu. Ralchenko
Density dependence of the forbidden lines in Ni-like tungsten.
J. Phys. B 40, F175 (2007)

e + W^{46+}	Fluorescence	1−5 keV	E/T

1114. A. Yu. Elizarov, I. I. Tupitsyn
Photoionization and electron-impact ionization of Yb atoms from an excited aligned state.
J. Phys. B 40, 1991 (2007)

e + Yb	Ionization	3.8−2,000 eV	E/T
e + Yb^*	Ionization	3.8−2,000 eV	E/T

1115. K. Chakrabarti, J. Tennyson
R-matrix calculation of the continuum states of carbon monoxide.
J. Phys. B 40, 2135 (2007)

e + CO^+	Dissociation	0−20 eV	E/T
e + CO^+	Recombination	0−20 eV	E/T
e + CO^+	Excitation	0−20 eV	E/T

1116. V. Jonauskas, S. Kucas, R. Karazija
On the interpretation of the intense emission of tungsten ions at about 5 nm.
J. Phys. B 40, 2179 (2007)

e + W^{29+}	Fluorescence	4.6−6.5 threshold	E/T
e + W^{30+}	Fluorescence	4.6−6.5 threshold	E/T
e + W^{31+}	Fluorescence	4.6−6.5 threshold	E/T
e + W^{32+}	Fluorescence	4.6−6.5 threshold	E/T
e + W^{33+}	Fluorescence	4.6−6.5 threshold	E/T
e + W^{34+}	Fluorescence	4.6−6.5 threshold	E/T
e + W^{35+}	Fluorescence	4.6−6.5 threshold	E/T
e + W^{36+}	Fluorescence	4.6−6.5 threshold	E/T
e + W^{37+}	Fluorescence	4.6−6.5 threshold	E/T
e + W^{29+}	Excitation	4.6−6.5 threshold	E/T
e + W^{30+}	Excitation	4.6−6.5 threshold	E/T
e + W^{31+}	Excitation	4.6−6.5 threshold	E/T
e + W^{32+}	Excitation	4.6−6.5 threshold	E/T
e + W^{33+}	Excitation	4.6−6.5 threshold	E/T
e + W^{34+}	Excitation	4.6−6.5 threshold	E/T
e + W^{35+}	Excitation	4.6−6.5 threshold	E/T
e + W^{36+}	Excitation	4.6−6.5 threshold	E/T
e + W^{37+}	Excitation	4.6−6.5 threshold	E/T

1117. J. Lecointre, S. Cherkani-Hassani, D. S. Belic, J. J. Jureta, K. Becker, H. Deutsch, T. D. Maerk, M. Probst, R. K. Janev, P. Defrance
Absolute cross sections and kinetic energy release distributions for electron impact ionization and dissociation of CD^+.
J. Phys. B 40, 2201 (2007)

e + CD^+	Dissociation	5−2500 eV	E/T
e + CD^+	Ionization	5−2500 eV	E/T

1118. Z. Chen, D. H. Madison, K. Bartschat
Investigation of the closure and simplified Green's function approximations in second-order distorted-wave calculations for the (e,2e) processes.
J. Phys. B 40, 2333 (2007)

e + He	Angular Scattering	102 eV	Th
e + He	Ionization	102 eV	Th

1119. T. Nakazato, T. Odagiri, H. Fukuzawa, H. Miyagi, L. Ishikawa, M. Kitajima, N. Kouchi
The electron-energy-loss spectra of methane tagged with $Lyman-\alpha photons$ in the range of doubly excited states.
J. Phys. B 40, 2459 (2007)

e + CH_4	Angular Scattering	80 eV	Exp
e + CH_4	Excitation	80 eV	Exp

1120. C. Kaiser, D. Spieker, J. Gao, M. Hussey, A. Murray, D. H. Madison
Coplanar symmetric and asymmetric electron impact ionization studies from the $1b_1$ state of H_2O at low to intermediate impact energies.
J. Phys. B 40, 2563 (2007)

e + H_2O	Angular Scattering	28−108 eV	E/T
e + H_2O^*	Angular Scattering	28−108 eV	E/T
e + H_2O	Ionization	28−108 eV	E/T
e + H_2O^*	Ionization	28−108 eV	E/T

1121. A. Naja, E. M. Staicu-Casagrande, X. G. Ren, F. Catoire, A. Lahmam-Bennani, C. Dal Cappello, C. T. Whelan
An (e,2e)-(e,3e) investigation of argon: Competition between inner-shell single ionization and direct double ionization processes.
J. Phys. B 40, 2871 (2007)

e + Ar	Angular Scattering	953−973 eV	Exp
e + Ar	Ionization	953−973 eV	Exp

1122. M. C. Witthoeft, A. D. Whiteford, N. R. Badnell
R-matrix electron-impact excitation calculations along the F-like iso-electronic sequence.
J. Phys. B 40, 2969 (2007)

e + Ne^{+}	Excitation	10^3-10^9 K	Th
e + Na^{2+}	Excitation	10^3-10^9 K	Th
e + Mg^{3+}	Excitation	10^3-10^9 K	Th
e + Al^{4+}	Excitation	10^3-10^9 K	Th
e + Si^{5+}	Excitation	10^3-10^9 K	Th
e + P^{6+}	Excitation	10^3-10^9 K	Th
e + S^{7+}	Excitation	10^3-10^9 K	Th
e + Cl^{8+}	Excitation	10^3-10^9 K	Th
e + Ar^{9+}	Excitation	10^3-10^9 K	Th
e + K^{10+}	Excitation	10^3-10^9 K	Th
e + Ca^{11+}	Excitation	10^3-10^9 K	Th
e + Sc^{12+}	Excitation	10^3-10^9 K	Th
e + Ti^{13+}	Excitation	10^3-10^9 K	Th
e + V^{14+}	Excitation	10^3-10^9 K	Th
e + Cr^{15+}	Excitation	10^3-10^9 K	Th
e + Mn^{16+}	Excitation	10^3-10^9 K	Th
e + Fe^{17+}	Excitation	10^3-10^9 K	Th
e + Co^{18+}	Excitation	10^3-10^9 K	Th
e + Ni^{19+}	Excitation	10^3-10^9 K	Th
e + Cu^{20+}	Excitation	10^3-10^9 K	Th
e + Zn^{21+}	Excitation	10^3-10^9 K	Th
e + Ga^{22+}	Excitation	10^3-10^9 K	Th
e + Ge^{23+}	Excitation	10^3-10^9 K	Th
e + As^{24+}	Excitation	10^3-10^9 K	Th
e + Se^{25+}	Excitation	10^3-10^9 K	Th
e + Br^{26+}	Excitation	10^3-10^9 K	Th
e + Kr^{27+}	Excitation	10^3-10^9 K	Th

1123. M.H.F. Bettega, M.A.P. Lima, L. G. Ferreira
Scattering of low-energy electrons by isomers of C_4H_{10}.
J. Phys. B 40, 3015 (2007)

e + C_4H_{10}	Elastic Scattering	1−200 eV	Th
e + C_4H_{10}	Angular Scattering	1−200 eV	Th
e + C_4H_{10}	Total Scattering	1−200 eV	Th
e + C_4H_{10}	Ionization	1−200 eV	Th

1124. L. Sharma, R. Srivastava, A. D. Stauffer
Excitation of atomic oxygen by electron impact.
J. Phys. B 40, 3025 (2007)

e + O	Angular Scattering	15−100 eV	Th
e + O	Excitation	15−100 eV	Th

1125. T.-M. Shen, C.-Y. Chen, Y.-S. Wang, Y.-M. Zou, Gu. M.-F.
Resonance excitation rate coefficients of Ni-like tungsten.
J. Phys. B 40, 3075 (2007)

e + W^{46+}	Excitation	400−5000 T(eV)	Th

1126. D. Raj, A. Kumar
Cross sections for electron scattering by a Ca atom at intermediate energy.
J. Phys. B 40, 3101 (2007)

e + Ca	Elastic Scattering	10−500 eV	Th
e + Ca	Angular Scattering	10−500 eV	Th
e + Ca	Total Scattering	10−500 eV	Th
e + Ca	Excitation	10−500 eV	Th
e + Ca	Ionization	10−500 eV	Th

1127. K. Bartschat, D. Weflen, X. Guan
Electron-impact ionization of magnesium.
J. Phys. B 40, 3231 (2007)

e + Mg	Angular Scattering	200−1500 eV	Th
e + Mg	Ionization	200−1500 eV	Th

1128. M. Vinodkumar, C. Limbachiya, B. Antony, K. N. Joshipura
Calculations of elastic, ionization and total cross sections for inert gases upon electron impact: Threshold to 2 keV.
J. Phys. B 40, 3259 (2007)

e + He	Elastic Scattering	14−2000 eV	Th
e + Ne	Elastic Scattering	14−2000 eV	Th
e + Ar	Elastic Scattering	14−2000 eV	Th
e + Kr	Elastic Scattering	14−2000 eV	Th
e + Xe	Elastic Scattering	14−2000 eV	Th
e + He	Excitation	14−2000 eV	Th
e + Ne	Excitation	14−2000 eV	Th
e + Ar	Excitation	14−2000 eV	Th
e + Kr	Excitation	14−2000 eV	Th
e + Xe	Excitation	14−2000 eV	Th
e + He	Ionization	14−2000 eV	Th
e + Ne	Ionization	14−2000 eV	Th
e + Ar	Ionization	14−2000 eV	Th
e + Kr	Ionization	14−2000 eV	Th
e + Xe	Ionization	14−2000 eV	Th

1129. M. Mattioli, G. Mazzitelli, M. Finkenthal, P. Mazzotta, K. B. Fournier, J. Kaastra, M. E. Puiatti
Updating of ionization data for ionization balance evaluations of atoms and ions for the elements hydrogen to germanium.
J. Phys. B 40, 3569 (2007)

e + H	Ionization	0−2000 eV	E/T
e + He	Ionization	0−2000 eV	E/T
e + Li	Ionization	0−2000 eV	E/T
e + Be	Ionization	0−2000 eV	E/T
e + B	Ionization	0−2000 eV	E/T
e + C	Ionization	0−2000 eV	E/T
e + N	Ionization	0−2000 eV	E/T
e + O	Ionization	0−2000 eV	E/T
e + F	Ionization	0−2000 eV	E/T
e + Ne	Ionization	0−2000 eV	E/T
e + Na	Ionization	0−2000 eV	E/T
e + Mg	Ionization	0−2000 eV	E/T
e + Al	Ionization	0−2000 eV	E/T
e + Si	Ionization	0−2000 eV	E/T
e + P	Ionization	0−2000 eV	E/T
e + S	Ionization	0−2000 eV	E/T
e + Cl	Ionization	0−2000 eV	E/T
e + Ar	Ionization	0−2000 eV	E/T
e + K	Ionization	0−2000 eV	E/T
e + Ca	Ionization	0−2000 eV	E/T
e + Sc	Ionization	0−2000 eV	E/T
e + Ti	Ionization	0−2000 eV	E/T
e + V	Ionization	0−2000 eV	E/T
e + Cr	Ionization	0−2000 eV	E/T
e + Mn	Ionization	0−2000 eV	E/T
e + Fe	Ionization	0−2000 eV	E/T
e + Co	Ionization	0−2000 eV	E/T
e + Ni	Ionization	0−2000 eV	E/T
e + Cu	Ionization	0−2000 eV	E/T
e + Zn	Ionization	0−2000 eV	E/T
e + Ga	Ionization	0−2000 eV	E/T
e + Ge	Ionization	0−2000 eV	E/T

1130. M. A. Khakoo, K. Keane, C. Campbell, N. Guzman, K. Hazlett
Low energy elastic electron scattering from ethylene.
J. Phys. B 40, 3601 (2007)

e + C_2H_4	Elastic Scattering	2−30 eV	Exp
e + C_2H_4	Angular Scattering	2−30 eV	Exp

1131. A. Naja, E. M. Staicu-Casagrande, A. Lahmam-Bennani, M. Nekkab, F. Mezdari, B. Joulakian, O. Chuluunbaatar, D. H. Madison
Triply differential (e,2e) cross sections for ionization of the nitrogen molecule at large energy transfer.
J. Phys. B 40, 3775 (2007)

e + N_2	Angular Scattering	600 eV	Exp
e + N_2	Ionization	600 eV	Exp

1132. C. S. Campos, M.A.Z. Vasconcellos, J. C. Trincavelli, S. Segui
Analytical expression for K- and L-shell cross sections of neutral atoms near ionization threshold by electron impact.
J. Phys. B 40, 3835 (2007)

e + Fe	Ionization		Th
e + Ni	Ionization		Th
e + Au	Ionization		Th

1133. O. Zatsarinny, K. Bartschat, L. Bandurina, S. Gedeon
Electron-impact excitation of calcium.
J. Phys. B 40, 4023 (2007)

e + Ca	Excitation	2−40 eV	Th

1134. P. Andersson, A. O. Lindahl, C. Alfredsson, L. Rogstroem, C. Diehl, D. J. Pegg, D. Hanstorp
The electron affinity of phosphorus.
J. Phys. B 40, 4097 (2007)

e + P	Attachment	745 MeV	Exp

1135. Md. F. Ahmed, W. Ji, R. P. McEachran, A. D. Stauffer
Elastic scattering of spin-polarized electrons from Cs atoms.
J. Phys. B 40, 4119 (2007)

e + Cs	Elastic Scattering	4−25 eV	Th

1136. A. S. Dickinson
Upper limit for quenching rate coefficient for cold electron-metastable-atom collisions.
J. Phys. B 40, F293 (2007)

e + Ca	De-excitation	0−100 K	Th
e + Ca*	De-excitation	0−100 K	Th
e + Xe	De-excitation	0−100 K	Th
e + Xe*	De-excitation	0−100 K	Th

1137. F.-C. Meng, C.-Y. Chen, X.-H. Shi, Y.-S. Wang, Y.-M. Zou, M.-F. Gu
Dielectronic recombination of Co-like gold ions.
J. Phys. B 40, 4269 (2007)

e + Au^{52+}	Recombination	100−3000 eV	Th

1138. S. E. Michelin, F. Arretche, K. T. Mazon, J. J. Piacentini, A. Marin, H. L. Oliveira, D. Travessini, M.-T. Lee, I. Iga, M. M. Fujimoto
Study of inner-shell excitation processes from N(1s) orbitals in N_2O molecules by electron impact.
J. Phys. B 40, 4333 (2007)

e + N_2O	Angular Scattering	415−900 eV	Th
e + N_2O	Excitation	415−900 eV	Th

1139. C. P. Ballance, D. C. Griffin, B. M. McLaughlin
Electron-impact excitation of Fe^{4+}: An intermediate-coupling R-matrix calculation.
J. Phys. B 40, F327 (2007)

e + Fe^{4+}	Excitation	0−3.2 Ry	E/T

1140. D. C. Griffin, C. P. Ballance, S. D. Loch, M. S. Pindzola
Electron-impact excitation of Ar^{+}: An improved determination of Ar impurity influx in tokamaks.
J. Phys. B 40, 4537 (2007)

e + Ar^+	Excitation	0−70 eV	E/T

1141. P. Rawat, V. S. Prabhudesai, G. Aravind, M. A. Rahman, E. Krishnakumar
Absolute cross sections for dissociative electron attachment to H_2O and D_2O.
J. Phys. B 40, 4625 (2007)

e + H_2O	Attachment	0−20 eV	Exp
e + D_2O	Attachment	0−20 eV	Exp
e + H_2O	Dissociation	0−20 eV	Exp
e + D_2O	Dissociation	0−20 eV	Exp

1142. H. Watanabe, H. Tobiyama, A. P. Kavanagh, Y. M. Li, N. Nakamura, H. A. Sakaue, F. J. Currell, S. Ohtani
Dielectronic recombination of He-like to C-like iodine ions.
Phys. Rev. A 75, 012702 (2007)

e + I^{47+}	Recombination	19.5−22.5 keV	Exp
e + I^{48+}	Recombination	19.5−22.5 keV	Exp
e + I^{49+}	Recombination	19.5−22.5 keV	Exp
e + I^{50+}	Recombination	19.5−22.5 keV	Exp
e + I^{51+}	Recombination	19.5−22.5 keV	Exp

1143. T. Kai, S. Nakazaki, T. Kawamura, H. Nishimura, K. Mima
Integral cross section with magnetic sublevels and polarization degree of He-like Cl ions by electron impact.
Phys. Rev. A 75, 012703 (2007)

e + Cl^{15+}	Excitation	2.5−5 keV	Th

1144. D. J. Haxton, C. W. McCurdy, T. N. Rescigno
Dissociative electron attachment to the H_2O molecule. I. Complex-valued potential-energy surfaces for the $^2B_1$, $^2A_1$, and $^2B_2$ metastable states of the water anion.
Phys. Rev. A 75, 012710 (2007)

e + H_2O	Attachment		Th
e + H_2O	Dissociation		Th

1145. D. J. Haxton, T. N. Rescigno, C. W. McCurdy
Dissociative electron attachment to the H_2O molecule. II. Nuclear dynamics on coupled electronic surfaces within the local complex potential model.
Phys. Rev. A 75, 012711 (2007)

e + H_2O	Attachment	5−14 eV	Th
e + H_2O	Dissociation	5−14 eV	Th

1146. V. V. Serov, V. L. Derbov, B. B. Joulakian, S. I. Vinitsky
Wave-packet-evolution approach for single and double ionization of two-electron systems by fast electrons.
Phys. Rev. A 75, 012715 (2007)

e + He	Angular Scattering	5.6 keV	Th
e + He	Ionization	5.6 keV	Th

1147. M. Tashiro, K. Morokuma
R-matrix calculation of integral and differential cross sections for low-energy electron-impact excitations of the N_2 molecule.
Phys. Rev. A 75, 012720 (2007)

e + N_2	Angular Scattering	8−20 eV	Th
e + N_2	Excitation	8−20 eV	Th

1148. L. Pravica, J. F. Williams, D. Cvejanovic, S. A. Napier
Angular momentum effects in the ionization-with-excitation process of open and closed 3d-shell states of zinc atoms.
Phys. Rev. A 75, 012721 (2007)

e + Zn	Fluorescence	16−20 eV	Exp
e + Zn	Excitation	16−20 eV	Exp
e + Zn	Ionization	16−20 eV	Exp

1149. A. Cerkic, D. B. Milosevic
Focal averaging and incoherent scattering in laser-assisted radiative recombination and scattering processes.
Phys. Rev. A 75, 013412 (2007)

e + He	Elastic Scattering	2−25 eV	Th
e + He	Angular Scattering	2−25 eV	Th
e + He^+	Angular Scattering	2−25 eV	Th
e + He^+	Recombination	2−25 eV	Th
e + He	Electron Collisions	2−25 eV	Th

1150. Y. Khajuria, S. S. Kumar, P. C. Deshmukh
(e,2e) triple differential cross section of Mg in coplanar symmetric geometry.
Phys. Rev. A 75, 022708 (2007)

e + Mg	Angular Scattering	13.65−67.5 eV	Th
e + Mg	Ionization	13.65−67.5 eV	Th

1151. S. Hossain, S. S. Tayal, S. J. Smith, J. C. Raymond, A. Chutjian
Measurement and calculation of absolute cross sections for excitation of the $3s^23p$ $^2P_{1/2}{}^o$ - $3s^23p$ $^2P_{3/2}{}^o$ fine-structure transition in Fe^{13+}.
Phys. Rev. A 75, 022709 (2007)

e + Fe^{13+}	Excitation	1.67−6.62 eV	Exp

1152. S. Hussain, M. Saleem, M. A. Baig
Measurement of oscillator strength distribution in the discrete and continuous spectrum of lithium.
Phys. Rev. A 75, 022710 (2007)

e + Li	Excitation		Exp

1153. J. Horacek, K. Houfek, M. Cizek
Giant structures in low-energy electron–deuterium-iodide elastic scattering cross section.
Phys. Rev. A 75, 022719 (2007)

e + HI	Elastic Scattering	1−500 MeV	Th
e + DI	Elastic Scattering	1−500 MeV	Th

1154. L. Pravica, D. Cvejanovic, J. F. Williams, S. A. Napier
Angular-momentum-dependent Fano profiles in excited zinc atoms.
Phys. Rev. A 75, 030701 (2007)

e + Zn	Attachment	10−12.5 eV	Exp
e + Zn	Excitation	10−12.5 eV	Exp

1155. K. Fahy, E. Sokell, G. O'Sullivan, A. Aguilar, J. M. Pomeroy, J. N. Tan, J. D. Gillaspy
Extreme-ultraviolet spectroscopy of highly charged xenon ions created using an electron-beam ion trap.
Phys. Rev. A 75, 032520 (2007)

e + Xe^{6+}	Fluorescence	180−8000 eV	E/T
e + Xe^{7+}	Fluorescence	180−8000 eV	E/T
e + Xe^{8+}	Fluorescence	180−8000 eV	E/T
e + Xe^{9+}	Fluorescence	180−8000 eV	E/T
e + Xe^{10+}	Fluorescence	180−8000 eV	E/T
e + Xe^{11+}	Fluorescence	180−8000 eV	E/T
e + Xe^{12+}	Fluorescence	180−8000 eV	E/T
e + Xe^{13+}	Fluorescence	180−8000 eV	E/T
e + Xe^{14+}	Fluorescence	180−8000 eV	E/T
e + Xe^{15+}	Fluorescence	180−8000 eV	E/T
e + Xe^{16+}	Fluorescence	180−8000 eV	E/T
e + Xe^{17+}	Fluorescence	180−8000 eV	E/T
e + Xe^{18+}	Fluorescence	180−8000 eV	E/T
e + Xe^{19+}	Fluorescence	180−8000 eV	E/T
e + Xe^{20+}	Fluorescence	180−8000 eV	E/T
e + Xe^{21+}	Fluorescence	180−8000 eV	E/T
e + Xe^{22+}	Fluorescence	180−8000 eV	E/T
e + Xe^{23+}	Fluorescence	180−8000 eV	E/T
e + Xe^{24+}	Fluorescence	180−8000 eV	E/T
e + Xe^{25+}	Fluorescence	180−8000 eV	E/T
e + Xe^{26+}	Fluorescence	180−8000 eV	E/T
e + Xe^{27+}	Fluorescence	180−8000 eV	E/T
e + Xe^{28+}	Fluorescence	180−8000 eV	E/T
e + Xe^{29+}	Fluorescence	180−8000 eV	E/T
e + Xe^{30+}	Fluorescence	180−8000 eV	E/T
e + Xe^{31+}	Fluorescence	180−8000 eV	E/T
e + Xe^{32+}	Fluorescence	180−8000 eV	E/T
e + Xe^{33+}	Fluorescence	180−8000 eV	E/T
e + Xe^{34+}	Fluorescence	180−8000 eV	E/T
e + Xe^{35+}	Fluorescence	180−8000 eV	E/T
e + Xe^{36+}	Fluorescence	180−8000 eV	E/T
e + Xe^{37+}	Fluorescence	180−8000 eV	E/T
e + Xe^{38+}	Fluorescence	180−8000 eV	E/T
e + Xe^{39+}	Fluorescence	180−8000 eV	E/T
e + Xe^{40+}	Fluorescence	180−8000 eV	E/T
e + Xe^{41+}	Fluorescence	180−8000 eV	E/T
e + Xe^{42+}	Fluorescence	180−8000 eV	E/T
e + Xe^{43+}	Fluorescence	180−8000 eV	E/T
e + Xe^{6+}	Excitation	180−8000 eV	E/T
e + Xe^{7+}	Excitation	180−8000 eV	E/T
e + Xe^{8+}	Excitation	180−8000 eV	E/T
e + Xe^{9+}	Excitation	180−8000 eV	E/T
e + Xe^{10+}	Excitation	180−8000 eV	E/T
e + Xe^{11+}	Excitation	180−8000 eV	E/T
e + Xe^{12+}	Excitation	180−8000 eV	E/T
e + Xe^{13+}	Excitation	180−8000 eV	E/T
e + Xe^{14+}	Excitation	180−8000 eV	E/T
e + Xe^{15+}	Excitation	180−8000 eV	E/T
e + Xe^{16+}	Excitation	180−8000 eV	E/T
e + Xe^{17+}	Excitation	180−8000 eV	E/T
e + Xe^{18+}	Excitation	180−8000 eV	E/T
e + Xe^{19+}	Excitation	180−8000 eV	E/T

e + Xe^{20+}	Excitation	180−8000 eV	E/T
e + Xe^{21+}	Excitation	180−8000 eV	E/T
e + Xe^{22+}	Excitation	180−8000 eV	E/T
e + Xe^{23+}	Excitation	180−8000 eV	E/T
e + Xe^{24+}	Excitation	180−8000 eV	E/T
e + Xe^{25+}	Excitation	180−8000 eV	E/T
e + Xe^{26+}	Excitation	180−8000 eV	E/T
e + Xe^{27+}	Excitation	180−8000 eV	E/T
e + Xe^{28+}	Excitation	180−8000 eV	E/T
e + Xe^{29+}	Excitation	180−8000 eV	E/T
e + Xe^{30+}	Excitation	180−8000 eV	E/T
e + Xe^{31+}	Excitation	180−8000 eV	E/T
e + Xe^{32+}	Excitation	180−8000 eV	E/T
e + Xe^{33+}	Excitation	180−8000 eV	E/T
e + Xe^{34+}	Excitation	180−8000 eV	E/T
e + Xe^{35+}	Excitation	180−8000 eV	E/T
e + Xe^{36+}	Excitation	180−8000 eV	E/T
e + Xe^{37+}	Excitation	180−8000 eV	E/T
e + Xe^{38+}	Excitation	180−8000 eV	E/T
e + Xe^{39+}	Excitation	180−8000 eV	E/T
e + Xe^{40+}	Excitation	180−8000 eV	E/T
e + Xe^{41+}	Excitation	180−8000 eV	E/T
e + Xe^{42+}	Excitation	180−8000 eV	E/T
e + Xe^{43+}	Excitation	180−8000 eV	E/T
e + Xe^{6+}	Ionization	180−8000 eV	E/T
e + Xe^{7+}	Ionization	180−8000 eV	E/T
e + Xe^{8+}	Ionization	180−8000 eV	E/T
e + Xe^{9+}	Ionization	180−8000 eV	E/T
e + Xe^{10+}	Ionization	180−8000 eV	E/T
e + Xe^{11+}	Ionization	180−8000 eV	E/T
e + Xe^{12+}	Ionization	180−8000 eV	E/T
e + Xe^{13+}	Ionization	180−8000 eV	E/T
e + Xe^{14+}	Ionization	180−8000 eV	E/T
e + Xe^{15+}	Ionization	180−8000 eV	E/T
e + Xe^{16+}	Ionization	180−8000 eV	E/T
e + Xe^{17+}	Ionization	180−8000 eV	E/T
e + Xe^{18+}	Ionization	180−8000 eV	E/T
e + Xe^{19+}	Ionization	180−8000 eV	E/T
e + Xe^{20+}	Ionization	180−8000 eV	E/T
e + Xe^{21+}	Ionization	180−8000 eV	E/T
e + Xe^{22+}	Ionization	180−8000 eV	E/T
e + Xe^{23+}	Ionization	180−8000 eV	E/T
e + Xe^{24+}	Ionization	180−8000 eV	E/T
e + Xe^{25+}	Ionization	180−8000 eV	E/T
e + Xe^{26+}	Ionization	180−8000 eV	E/T
e + Xe^{27+}	Ionization	180−8000 eV	E/T
e + Xe^{28+}	Ionization	180−8000 eV	E/T
e + Xe^{29+}	Ionization	180−8000 eV	E/T
e + Xe^{30+}	Ionization	180−8000 eV	E/T
e + Xe^{31+}	Ionization	180−8000 eV	E/T
e + Xe^{32+}	Ionization	180−8000 eV	E/T
e + Xe^{33+}	Ionization	180−8000 eV	E/T
e + Xe^{34+}	Ionization	180−8000 eV	E/T
e + Xe^{35+}	Ionization	180−8000 eV	E/T
e + Xe^{36+}	Ionization	180−8000 eV	E/T
e + Xe^{37+}	Ionization	180−8000 eV	E/T
e + Xe^{38+}	Ionization	180−8000 eV	E/T

e + Xe^{39+}	Ionization	180−8000 eV	E/T
e + Xe^{40+}	Ionization	180−8000 eV	E/T
e + Xe^{41+}	Ionization	180−8000 eV	E/T
e + Xe^{42+}	Ionization	180−8000 eV	E/T
e + Xe^{43+}	Ionization	180−8000 eV	E/T

1156. T. Y. Suzuki, H. Suzuki, S. Ohtani, T. Takayanagi, K. Okada
Asymptotic behavior of apparent generalized oscillator strengths for optically forbidden transitions in rare-gas atoms.
Phys. Rev. A 75, 032705 (2007)

e + **Ne**	Excitation	100−500 eV	Exp
e + **Ar**	Excitation	100−500 eV	Exp
e + **Kr**	Excitation	100−500 eV	Exp
e + **Xe**	Excitation	100−500 eV	Exp

1157. A. K. Bhatia
Hybrid theory of electron-hydrogen elastic scattering.
Phys. Rev. A 75, 032713 (2007)

e + **H**	Elastic Scattering	0−1 a.u.	Th

1158. G. A. Gallup, I. I. Fabrikant
Resonances and threshold effects in low-energy electron collisions with methyl halides.
Phys. Rev. A 75, 032719 (2007)

e + CH_3I	Dissociation	0−600 meV	Th
e + CH_3Cl	Dissociation	0−600 meV	Th
e + CH_3Br	Dissociation	0−600 meV	Th
e + CH_3I	Elastic Scattering	0−600 meV	Th
e + CH_3Cl	Elastic Scattering	0−600 meV	Th
e + CH_3Br	Elastic Scattering	0−600 meV	Th
e + CH_3I	Angular Scattering	0−600 meV	Th
e + CH_3Cl	Angular Scattering	0−600 meV	Th
e + CH_3Br	Angular Scattering	0−600 meV	Th
e + CH_3I	Excitation	0−600 meV	Th
e + CH_3Cl	Excitation	0−600 meV	Th
e + CH_3Br	Excitation	0−600 meV	Th

1159. E. Surdutovich, W. E. Kauppila, C. K. Kwan, E. G. Miller, S. P. Parikh, K. A. Price, T. S. Stein
Measurements of total and inelastic cross sections in positron-Cs and electron-Cs collisions.
Phys. Rev. A 75, 032720 (2007)

e + **Cs**	Elastic Scattering	6−200 eV	Exp
e + **Cs**	Excitation	6−200 eV	Exp
e + **Cs**	Ionization	6−200 eV	Exp

1160. M. A. Stevenson, B. Lohmann, I. Bray, D. V. Fursa, A. T. Stelbovics
Single ionization of helium by 730-eV electrons.
Phys. Rev. A 75, 034701 (2007)

e + **He**	Angular Scattering	730 eV	Th
e + **He**	Ionization	730 eV	Th

1161. S. Bellm, J. Lower, K. Bartschat, X. Guan, D. Weflen, M. Foster, A. L. Harris, D. H. Madison
Ionization and ionization-excitation of helium to the n=1-4 states of He^+ by electron impact.
Phys. Rev. A 75, 042704 (2007)

e + He	Angular Scattering	112−309 eV	E/T
e + He	Excitation	112−309 eV	E/T
e + He	Ionization	112−309 eV	E/T

1162. N. Watanabe, M. Takahashi, Y. Udagawa, K. A. Kouzakov, Yu. V. Popov
Two-step mechanisms in ionization-excitation of He studied by binary (e,2e) experiments and second-Born-approximation calculations.
Phys. Rev. A 75, 052701 (2007)

e + He	Excitation	1240−4260 eV	E/T
e + He^+	Excitation	1240−4260 eV	E/T
e + He	Ionization	1240−4260 eV	E/T
e + He^+	Ionization	1240−4260 eV	E/T

1163. B. Wallbank, M. E. Bannister, H. F. Krause, Y.-S. Chung, A.C.H. Smith, N. Djuric, G. H. Dunn
Merged-beam measurements of absolute cross sections for electron-impact excitation of S^{4+} ($3s^2$ ^1S -¿ 3s3p ^1P) and S^{5+} (3s ^2S -¿ 3p ^2P).
Phys. Rev. A 75, 052703 (2007)

e + S^{4+}	Excitation	14.5−17 eV	Exp

1164. J. Royal, A. E. Orel
Resonant dissociative excitation and vibrational excitation of $He_2{}^+$.
Phys. Rev. A 75, 052706 (2007)

e + $He_2{}^+$	Dissociation	1−15 eV	E/T
e + $He_2{}^+$	Excitation	1−15 eV	E/T

1165. R. O. Jung, J. B. Boffard, L. W. Anderson, C. C. Lin
Excitation into $3p^5 5p$ levels from the metastable levels of Ar.
Phys. Rev. A 75, 052707 (2007)

e + Ar	Excitation	2−10 eV	Exp
e + Ar^*	Excitation	2−10 eV	Exp

1166. O. G. de Lucio, J. Gavin, R. D. DuBois
Doubly differential single and multiple ionization of krypton by electron impact.
Phys. Rev. A 75, 052709 (2007)

e + Kr	Angular Scattering	240−500 eV	Exp
e + Kr	Ionization	240−500 eV	Exp

1167. S. Milisavljevic, M. S. Rabasovic, D. Sevic, V. Pejcev, D. M. Filipovic, L. Sharma, R. Srivastava, A. D. Stauffer, B. P. Marinkovic
Electron-impact excitation of the 6p7s $^3P_1$ state of Pb atom at small scattering angles.
Phys. Rev. A 75, 052713 (2007)

e + Pb	Angular Scattering	10−100 eV	E/T
e + Pb	Excitation	10−100 eV	E/T

1168. C. R. Vane, E. M. Bahati, M. E. Bannister, R. D. Thomas
Electron-impact dissociation of $CH_2{}^+$ ions: Measurement of CH^+ and C^+ fragment ions.
Phys. Rev. A 75, 052715 (2007)

e + $CH_2{}^+$	Dissociation	3−100 eV	E/T
e + $CH_2{}^+$	Ionization	3−100 eV	E/T

1169. V. Ngassam, A. E. Orel
Resonances in low-energy electron scattering from $HCNH^+$.
Phys. Rev. A 75, 062702 (2007)

e + $HCNH^+$	Elastic Scattering	0.05−0.15 hartree	Th

1170. H. Kato, C. Makochekanwa, Y. Shiroyama, M. Hoshino, N. Shinohara, O. Sueoka, M. Kimura, H. Tanaka
Electron and positron scattering from the benzene derivative: Toluene.
Phys. Rev. A 75, 062705 (2007)

e + $C_6H_5CH_3$	Elastic Scattering	0.4−1000 eV	E/T
e + $C_6H_5CH_3$	Angular Scattering	0.4−1000 eV	E/T
e + $C_6H_5CH_3$	Excitation	0.4−1000 eV	E/T

1171. T. Kai, S. Nakazaki, T. Kawamura, H. Nishimura, K. Mima
Elastic- and inelastic-scattering collision strengths between magnetic sublevels for electron impact on He-like Cu ions.
Phys. Rev. A 75, 062710 (2007)

e + Cu^{27+}	Elastic Scattering	0−800 Ry	Th
e + Cu^{27+}	Excitation	0−800 Ry	Th

1172. J. C. Wang, M. Lu, D. Esteves, M. Habibi, G. Alna'washi, R. A. Phaneuf, A.L.D. Kilcoyne
Photoionization and electron-impact ionization of Ar^{5+}.
Phys. Rev. A 75, 062712 (2007)

e + Ar^{5+}	Ionization	50−350 eV	Exp

1173. F. A. Gianturco, K. Willner
Ramsauer-Townsend effect for electron scattering from gaseous CF_4 molecules.
Phys. Rev. A 75, 062714 (2007)

e + CF_4	Elastic Scattering	0−0.5 eV	Th

1174. D. S. Slaughter, V. Karaganov, M. J. Brunger, P.J.O. Teubner, I. Bray, K. Bartschat
Superelastic electron scattering from laser-excited cesium atoms.
Phys. Rev. A 75, 062717 (2007)

e + Cs	Elastic Scattering	5.5−13.5 eV	E/T
e + Cs^*	Elastic Scattering	5.5−13.5 eV	E/T
e + Cs	Angular Scattering	5.5−13.5 eV	E/T
e + Cs^*	Angular Scattering	5.5−13.5 eV	E/T

1175. D. Sokolovski, Z. Felfli, S. Yu. Ovchinnikov, J. H. Macek, A. Z. Msezane
Regge oscillations in electron-atom elastic cross sections.
Phys. Rev. A 76, 012705 (2007)

e + H	Elastic Scattering	0−13.6 eV	Th
e + Ar	Elastic Scattering	0−13.6 eV	Th
e + Kr	Elastic Scattering	0−13.6 eV	Th
e + Xe	Elastic Scattering	0−13.6 eV	Th

1176. M. M. Fujimoto, S. E. Michelin, K. T. Mazon, A. M. Santos, H. L. Oliveira, M.-T. Lee
Comparative study of elastic electron collisions on the isoelectronic SiN_2, **SiCO, and CSiO radicals.**
Phys. Rev. A 76, 012709 (2007)

e + $\mathbf{SiN_2}$	Elastic Scattering	1−100 eV	Th
e + SiCO	Elastic Scattering	1−100 eV	Th
e + CSiO	Elastic Scattering	1−100 eV	Th
e + $\mathbf{SiN_2}$	Angular Scattering	1−100 eV	Th
e + SiCO	Angular Scattering	1−100 eV	Th
e + CSiO	Angular Scattering	1−100 eV	Th
e + $\mathbf{SiN_2}$	Total Scattering	1−100 eV	Th
e + SiCO	Total Scattering	1−100 eV	Th
e + CSiO	Total Scattering	1−100 eV	Th

1177. C. Winstead, V. McKoy
Low-energy electron scattering by pyrazine.
Phys. Rev. A 76, 012712 (2007)

e + $\mathbf{C_4H_4N_2}$	Elastic Scattering	0−10 eV	Th
e + $\mathbf{C_4H_4N_2}$	Angular Scattering	0−10 eV	Th

1178. M. S. Pindzola, F. Robicheaux, J. Colgan, C. P. Ballance
Electron-impact ionization of diatomic molecules using a configuration-average distorted-wave method.
Phys. Rev. A 76, 012714 (2007)

e + $\mathbf{H_2}$	Ionization	15−100 eV	Th
e + $\mathbf{N_2}$	Ionization	15−100 eV	Th

1179. I. I. Fabrikant
Dissociative electron attachment on surfaces and in bulk media.
Phys. Rev. A 76, 012902 (2007)

e + $\mathbf{CH_3Cl}$	Attachment	0−16 eV	Th
e + $\mathbf{CF_3Cl}$	Attachment	0−16 eV	Th
e + $\mathbf{CH_3Cl}$	Dissociation	0−16 eV	Th
e + $\mathbf{CF_3Cl}$	Dissociation	0−16 eV	Th

1180. S. D. Loch, Sh. A. Abdel-Naby, C. P. Ballance, M. S. Pindzola
Electron-impact ionization and recombination of M-shell atomic ions in the argon isonuclear sequence.
Phys. Rev. A 76, 022706 (2007)

e + $\mathbf{Ar^{+}}$	Recombination	100−2000 eV	Th
e + $\mathbf{Ar^{2+}}$	Recombination	100−2000 eV	Th
e + $\mathbf{Ar^{3+}}$	Recombination	100−2000 eV	Th
e + $\mathbf{Ar^{4+}}$	Recombination	100−2000 eV	Th
e + $\mathbf{Ar^{5+}}$	Recombination	100−2000 eV	Th
e + $\mathbf{Ar^{6+}}$	Recombination	100−2000 eV	Th
e + $\mathbf{Ar^{7+}}$	Recombination	100−2000 eV	Th
e + $\mathbf{Ar^{+}}$	Ionization	100−2000 eV	Th

e + Ar^{2+}	Ionization	100−2000 eV	Th
e + Ar^{3+}	Ionization	100−2000 eV	Th
e + Ar^{4+}	Ionization	100−2000 eV	Th
e + Ar^{5+}	Ionization	100−2000 eV	Th
e + Ar^{6+}	Ionization	100−2000 eV	Th
e + Ar^{7+}	Ionization	100−2000 eV	Th

1181. R. S. Schappe, K. Wendt
Emission cross sections for electron impact on Cl_2.
Phys. Rev. A 76, 022707 (2007)

e + Cl_2	Fluorescence	10−750 eV	Exp
e + Cl_2	Ionization	10−750 eV	Exp

1182. I. Nevo, S. Novotny, H. Buhr, V. Andrianarijaona, S. Altevogt, O. Heber, J. Hoffmann, H. Kreckel, L. Lammich, M. Lestinsky, H. B. Pedersen, D. Schwalm, A. Wolf, D. Zajfman
Three-body kinematical correlation in the dissociative recombination of $CH_2{}^+$ by three-dimensional imaging.
Phys. Rev. A 76, 022713 (2007)

e + $CH_2{}^+$	Dissociation	3.7 MeV	Exp
e + $CH_2{}^+$	Recombination	3.7 MeV	Exp

1183. S. Milisavljevic, M. S. Rabasovic, D. Sevic, V. Pejcev, D. M. Filipovic, L. Sharma, R. Srivastava, A. D. Stauffer, B. P. Marinkovic
Excitation of the 6p7s $^3P_{0,1}$ states of Pb atoms by electron impact: Differential and integrated cross sections.
Phys. Rev. A 76, 022714 (2007)

e + Pb	Angular Scattering	10−100 eV	Exp
e + Pb	Excitation	10−100 eV	Exp

1184. L. Sharma, R. Srivastava, A. D. Stauffer
Excitation of the $3p^5$ 5p levels of argon from the $3p^5$ 4s metastable states.
Phys. Rev. A 76, 024701 (2007)

e + Ar	Excitation	1−50 eV	Th
e + Ar^*	Excitation	1−50 eV	Th

1185. J. Wu, J. Yuan
Fully relativistic R-matrix study of the interaction between a slow electron and atomic iodine: Scattering and photodetachment.
Phys. Rev. A 76, 024702 (2007)

e + I	Attachment	0−8 eV	Th
e + I	Elastic Scattering	0−8 eV	Th

1186. K. Bartschat, I. Bray, D. V. Fursa, A. T. Stelbovics
Absolute triple-differential cross sections for ionization-excitation of helium.
Phys. Rev. A 76, 024703 (2007)

e + He	Angular Scattering	112.6−268.6 eV	Th
e + He	Excitation	112.6−268.6 eV	Th
e + He	Ionization	112.6−268.6 eV	Th

1187. M. S. Pindzola, F. Robicheaux, J. Colgan
Electron-impact double ionization of helium at high energies.
Phys. Rev. A 76, 024704 (2007)

e + He	Ionization	75−450 eV	Th

1188. E. S. Shuman, W. Yang, T. F. Gallagher
Magnetic field enhancement of dielectronic recombination from a continuum of finite bandwidth.
Phys. Rev. A 76, 031401 (2007)

e + $\mathbf{Ba^+}$	Recombination	0−250 G	Exp

1189. E.C.M. Chen, E. S. Chen
Electron affinities and activation energies for reactions with thermal electrons: SF_6 **and** SF_5**.**
Phys. Rev. A 76, 032508 (2007)

e + $\mathbf{SF_6}$	Dissociation	50−7500 K	Exp
e + $\mathbf{SF_5}$	Dissociation	50−7500 K	Exp
e + $\mathbf{SF_6}$	Recombination	50−7500 K	Exp
e + $\mathbf{SF_5}$	Recombination	50−7500 K	Exp

1190. P. Limao-Vieira, E. Vasekova, A. Giuliani, J.M.C. Lourenco, P. M. Santos, D. Duflot, S. V. Hoffmann, N. J. Mason, J. Delwiche, M.-J. Hubin-Franskin
Perfluorocyclobutane electronic state spectroscopy by high-resolution vacuum ultraviolet photoabsorption, electron impact, He I photoelectron spectroscopy, and ab initio calculations.
Phys. Rev. A 76, 032509 (2007)

e + $\mathbf{C_4F_8}$	Excitation	100 eV	Exp
e + $\mathbf{C\text{-}C_4F_8}$	Excitation	100 eV	Exp

1191. A. Svendsen, L. Lammich, M. Sanggaard, L. H. Andersen
Electron-impact detachment from $PO_n{}^-$ **(n = 0-3).**
Phys. Rev. A 76, 032707 (2007)

e + $\mathbf{PO^-}$	Detachment	0−50 eV	Exp
e + $\mathbf{PO_2}$	Detachment	0−50 eV	Exp
e + $\mathbf{PO_3}$	Detachment	0−50 eV	Exp
e + $\mathbf{PO^-}$	Fluorescence	0−50 eV	Exp
e + $\mathbf{PO_2}$	Fluorescence	0−50 eV	Exp
e + $\mathbf{PO_3}$	Fluorescence	0−50 eV	Exp

1192. I. Linert, B. Mielewska, G. C. King, M. Zubek
Differential cross sections for elastic electron scattering in xenon in the energy range from 5 eV to 10 eV.
Phys. Rev. A 76, 032715 (2007)

e + Xe	Elastic Scattering	5−10 eV	Exp
e + Xe	Angular Scattering	5−10 eV	Exp
e + Xe	Total Scattering	5−10 eV	Exp

1193. L. Caron, D. Bouchiha, J. D. Gorfinkiel, L. Sanche
Adapting gas-phase electron scattering R-matrix calculations to a condensed-matter environment.
Phys. Rev. A 76, 032716 (2007)

e + $\mathbf{H_2O}$	Elastic Scattering	0−1.2 Ry	Th

1194. E. W. Schmidt, D. Bernhardt, A. Mueller, S. Schippers, S. Fritzsche, J. Hoffmann, A. S. Jaroshevich, C. Krantz, M. Lestinsky, D. A. Orlov, A. Wolf, D. Lukic, D. W. Savin
Electron-ion recombination of Si IV forming Si III: Storage-ring measurement and multiconfiguration Dirac-Fock calculations.
Phys. Rev. A 76, 032717 (2007)

e + Si^{3+}	Recombination	0−186 eV	E/T

1195. C. J. Fontes, H. L. Zhang
Relativistic plane-wave Born theory and its application to electron-impact excitation.
Phys. Rev. A 76, 040703 (2007)

e + Fe^{24+}	Excitation	0−50,000 eV	Th

1196. A. Domaracka, P. Mozejko, E. Ptasinska-Denga, C. Szmytkowski
Collisions of electrons with trimethylphosphine [$P(CH_3)_3$] molecules.
Phys. Rev. A 76, 042701 (2007)

e + $P(CH_3)_3$	Dissociation	0.4−400 eV	Exp
e + $P(CH_3)_3$	Elastic Scattering	0.4−400 eV	Exp
e + $P(CH_3)_3$	Excitation	0.4−400 eV	Exp
e + $P(CH_3)_3$	Ionization	0.4−400 eV	Exp

1197. S. Morisset, L. Pichl, A. E. Orel, I. F. Schneider
Wave-packet approach to Rydberg resonances in dissociative recombination.
Phys. Rev. A 76, 042702 (2007)

e + $H_2{}^+$	Dissociation	0−2.2 eV	Th
e + HD^+	Dissociation	0−2.2 eV	Th
e + $H_2{}^+$	Recombination	0−2.2 eV	Th
e + HD^+	Recombination	0−2.2 eV	Th

1198. J. B. Roos, A. Larson, A. E. Orel
Electron collisions with $H_3{}^+$: Ion-pair formation.
Phys. Rev. A 76, 042703 (2007)

e + $H_3{}^+$	Attachment	0−15 eV	Th
e + $H_3{}^+$	Dissociation	0−15 eV	Th
e + $H_3{}^+$	Recombination	0−15 eV	Th

1199. J. C. Berengut, S. D. Loch, M. S. Pindzola, C. P. Ballance, D. C. Griffin
Electron-impact ionization of the boron atom.
Phys. Rev. A 76, 042704 (2007)

e + B	Excitation	0−70 eV	Th
e + B	Ionization	0−70 eV	Th

1200. G.L.C. de Souza, E. A. y Castro, L. E. Machado, L. M. Brescansin, I. Iga, M.-T. Lee
Theoretical study on electron collisions with SiF and SiF_2 radicals in the low- and intermediate-energy range.
Phys. Rev. A 76, 042706 (2007)

e + SiF	Dissociation	1−1000 eV	Th
e + SiF_2	Dissociation	1−1000 eV	Th
e + SiF	Elastic Scattering	1−1000 eV	Th
e + SiF_2	Elastic Scattering	1−1000 eV	Th
e + SiF	Angular Scattering	1−1000 eV	Th

e + SiF_2	Angular Scattering	1−1000 eV	Th
e + SiF	Total Scattering	1−1000 eV	Th
e + SiF_2	Total Scattering	1−1000 eV	Th
e + SiF	Excitation	1−1000 eV	Th
e + SiF_2	Excitation	1−1000 eV	Th
e + SiF	Ionization	1−1000 eV	Th
e + SiF_2	Ionization	1−1000 eV	Th

1201. X.-M. Tong, T. Watanabe
Application of linear density response theory to electron-impact autoionizing resonances.
Phys. Rev. A 76, 042715 (2007)

e + Ar	Angular Scattering	100−2500 eV	Th
e + Ar	Excitation	100−2500 eV	Th
e + Ar	Ionization	100−2500 eV	Th

1202. D. J. Haxton, T. N. Rescigno, C. W. McCurdy
Erratum: "Dissociative electron attachment to the H_2O molecule. II. Nuclear dynamics on coupled electronic surfaces within the local complex potential model" [Phys. Rev. A 75, 012711 (2007)].
Phys. Rev. A 76, 049907 (2007)

e + H_2O	Attachment	5−14 eV	Th
e + H_2O	Dissociation	5−14 eV	Th

1203. A. Munoz, J. C. Oller, F. Blanco, J. D. Gorfinkiel, P. Limao-Vieira, G. Garcia
Electron-scattering cross sections and stopping powers in H_2O.
Phys. Rev. A 76, 052707 (2007)

e + H_2O	Elastic Scattering	1−10,000 eV	E/T
e + H_2O	Angular Scattering	1−10,000 eV	E/T
e + H_2O	Excitation	1−10,000 eV	E/T

1204. G.-X. Chen
Converged Dirac R-matrix calculation of electron impact excitation of Fe XVII.
Phys. Rev. A 76, 062708 (2007)

e + Fe^{16+}	Excitation	60−85 Ry	Th

1205. V. Zhaunerchyk, W. D. Geppert, F. Osterdahl, M. Larsson, R. D. Thomas, E. Bahati, M. E. Bannister, M. R. Fogle, C. R. Vane
Dissociative recombination dynamics of the ozone cation.
Phys. Rev. A 77, 022704 (2007)

e + $O_3{}^+$	Dissociation	0−0.2 eV	Exp
e + $O_3{}^+$	Recombination	0−0.2 eV	Exp

1206. A. O. Lindahl, P. Andersson, G. F. Collins, D. Hanstorp, D. J. Pegg, M. Danielsson, W. D. Geppert, M. Hamberg, R. D. Thomas, V. Zhaunerchyk, C. Diehl, N. D. Gibson, A. Kallberg
Experimental investigation of electron impact on $Si_2{}^-$.
Phys. Rev. A 77, 022710 (2007)

e + $Si_2{}^-$	Dissociation	0−210 eV	Exp
e + $Si_2{}^-$	Detachment	0−210 eV	Exp

1207. R. Reuschl, A. Gumberidze, C. Kozhuharov, U. Spillmann, S. Tashenov, Th. Stoehlker, J. Eichler
State-selective x-ray studies of radiative recombination into bare and H-like uranium at threshold energies.
Phys. Rev. A 77, 032701 (2007)

e + U^{91+}	Recombination	2×10^{-3}-100 eV	E/T
e + U^{92+}	Recombination	2×10^{-3}-100 eV	E/T

1208. M. A. Stevenson, B. Lohmann
Fully differential cross-section measurements for electron-impact ionization of argon over the complete in-plane angular range.
Phys. Rev. A 77, 032708 (2007)

e + Ar	Angular Scattering	113.5 eV	Exp
e + Ar	Ionization	113.5 eV	Exp

1209. J. Fu, T. W. Gorczyca, D. Nikolic, N. R. Badnell, D. W. Savin, M. F. Gu
Orbital sensitivity in Mg^{2+} dielectronic recombination calculations.
Phys. Rev. A 77, 032713 (2007)

e + Mg^{2+}	Recombination	45−65 eV	Th

1210. M. Duerr, C. Dimopoulou, B. Najjari, A. Dorn, K. Bartschat, I. Bray, D. V. Fursa, Z. Chen, D. H. Madison, J. Ullrich
Higher-order contributions observed in three-dimensional (e,2e) cross-section measurements at 1-keV impact energy.
Phys. Rev. A 77, 032717 (2007)

e + He	Angular Scattering	1 keV	E/T
e + He	Ionization	1 keV	E/T

1211. S. Kaur, K. L. Baluja, J. Tennyson
Electron-impact study of NeF using the R-matrix method.
Phys. Rev. A 77, 032718 (2007)

e + NeF	Elastic Scattering	0−15 eV	Th
e + NeF	Angular Scattering	0−15 eV	Th
e + NeF	Excitation	0−15 eV	Th

1212. H. Buhr, H. B. Pedersen, S. Altevogt, V. M. Andrianarijaona, H. Kreckel, L. Lammich, S. Novotny, D. Strasser, J. Hoffmann, M. Lange, M. Lestinsky, M. B. Mendes, M. Motsch, O. Novotny, D. Schwalm, X. Urbain, D. Zajfman, A. Wolf
Inelastic electron collisions of the isotopically symmetric helium dimer ion $^4He_2{}^+$ in a storage ring.
Phys. Rev. A 77, 032719 (2007)

e + $He_2{}^+$	Dissociation	3×10^{-3}-40 eV	Exp
e + $He_2{}^+$	Recombination	3×10^{-3}-40 eV	Exp
e + $He_2{}^+$	Excitation	3×10^{-3}-40 eV	Exp

1213. S. Bellm, J. Lower, Z. Stegen, D. H. Madison, H. P. Saha
Investigating many-electron exchange effects in electron–heavy-atom scattering.
Phys. Rev. A 77, 032722 (2007)

e + Xe	Angular Scattering	112 eV	E/T
e + Xe	Ionization	112 eV	E/T

1214. N. Watanabe, K. A. Kouzakov, Yu. V. Popov, M. Takahashi
Electron-impact double ionization of He at large momentum transfer studied by second-order Born-approximation calculations.
Phys. Rev. A 77, 032725 (2007)

e + He	Angular Scattering	2080 eV	Th
e + He	Ionization	2080 eV	Th

1215. V. Zhaunerchyk, R. D. Thomas, W. D. Geppert, M. Hamberg, M. Kaminska, E. Vigren, M. Larsson
Dissociative recombination of D_2H^+: Comparison between recent storage-ring results and theoretical calculations.
Phys. Rev. A 77, 034701 (2007)

e + H_3^+	Dissociation	0−50 eV	Exp
e + D_2H^+	Dissociation	0−50 eV	Exp
e + H_3^+	Recombination	0−50 eV	Exp
e + D_2H^+	Recombination	0−50 eV	Exp

1216. O. Zatsarinny, K. Bartschat
Relativistic B-spline R-matrix method for electron collisions with atoms and ions: Application to low-energy electron scattering from Cs.
Phys. Rev. A 77, 062701 (2008)

e + Cs	Elastic Scattering	0.8−7 eV	Th
e + Cs	Angular Scattering	0.8−7 eV	Th

1217. S. P. Cao, X. Ma, A. Dorn, M. Durr, J. Ullrich
Emission characteristics of three final continuum electrons produced in low-energy double ionization of helium.
Phys. Rev. A 77, 062703 (2008)

e + He	Ionization	106 eV	Exp

1218. J. Colgan, H. L. Zhang, C. J. Fontes
Electron-impact excitation and ionization cross sections for the Si, Cl, and Ar isonuclear sequences.
Phys. Rev. A 77, 062704 (2008)

e + Si^{9+}	Excitation	0−5000 eV	Th
e + Cl^{12+}	Excitation	0−5000 eV	Th
e + Ar^{13+}	Excitation	0−5000 eV	Th
e + Si	Ionization	0−5000 eV	Th
e + Si^{2+}	Ionization	0−5000 eV	Th
e + Si^{3+}	Ionization	0−5000 eV	Th
e + Si^{7+}	Ionization	0−5000 eV	Th
e + Cl^{3+}	Ionization	0−5000 eV	Th
e + Ar^{4+}	Ionization	0−5000 eV	Th

1219. H. P. Saha
Hartree-Fock studies of the triple differential cross section for electron-impact ionization of the hydrogen atom.
Phys. Rev. A 77, 062705 (2008)

e + H	Angular Scattering	14.6−25 eV	Th
e + H	Ionization	14.6−25 eV	Th

1220. M. S. Pindzola, S. D. Loch, J. Colgan, C. J. Fontes
Electron-impact ionization of atoms in high-temperature dense plasmas.
Phys. Rev. A 77, 062707 (2008)

e + Ne^{9+}	Excitation	125−12,500 eV	Th
e + Ne^{4+}	Ionization	125−12,500 eV	Th
e + Au^{47+}	Ionization	125−12,500 eV	Th

1221. H. Kato, H. Kawahara, M. Hoshino, H. Tanaka, L. Campbell, M. J. Brunger
Electron-impact excitation of the $B^2\ \Sigma_u{}^+$ and $C^1\ \Pi_u$ electronic states of H_2.
Phys. Rev. A 77, 062708 (2008)

e + H_2	Angular Scattering	40−200 eV	Exp
e + H_2	Excitation	40−200 eV	Exp

1222. B. E. O'Rourke, F. J. Currell, H. Kuramoto, S. Ohtani, H. Watanabe, Y. M. Li, T. Tawara, X. M. Tong
Branching ratios of x-ray photons from dielectronic recombination processes in H-like titanium ions.
Phys. Rev. A 77, 062709 (2008)

e + Ti^{21+}	Recombination	3−11 keV	Exp
e + Ti^{21+}	Fluorescence	3−11 keV	Exp

1223. M. Maslov, M. J. Brunger, P.J.O. Teubner, O. Zatsarinny, K. Bartschat, D. Fursa, I. Bray, R. P. McEachran
Electron-impact excitation of the $(5d^{10}6s)^2S_{1/2}$ -¿ $(5d^{10}6p)^2P_{1/2,3/2}$ resonance transitions in gold atoms.
Phys. Rev. A 77, 062711 (2008)

e + Au	Excitation	4.28−577 eV	E/T

1224. L. U. Ancarani, G. Gasaneo, F. D. Colavecchia, C. Dal Cappello
Interplay of initial and final states for (e,3e) and (gamma,2e) processes on helium.
Phys. Rev. A 77, 062712 (2008)

e + He	Angular Scattering	5.6 keV	Th
e + He	Ionization	5.6 keV	Th

1225. M. S. Rabasovic, V. I. Kelemen, S. D. Tosic, D. Sevic, M. M. Dovhanych, V. Pejcev, D. M. Filipovic, E. Yu. Remeta, B. P. Marinkovic
Experimental and theoretical study of the elastic-electron–indium-atom scattering in the intermediate energy range.
Phys. Rev. A 77, 062713 (2008)

e + In	Elastic Scattering	10−100 eV	E/T
e + In	Angular Scattering	10−100 eV	E/T

1226. E. S. Shuman, W. Yang, T. F. Gallagher
Enhancement of dielectronic recombination in combined electric and magnetic fields.
Phys. Rev. A 77, 063419 (2008)

e + Ba^+	Recombination	0 eV	Exp
e + Ba^{+*}	Recombination	0 eV	Exp

1227. N. Douguet, V. Kokoouline, C. H. Greene
Theoretical rate of dissociative recombination of HCO^+ and DCO^+ ions.
Phys. Rev. A 77, 064703 (2007)

e + HCO^+	Dissociation	0.001−1 eV	Th
e + DCO^+	Dissociation	0.001−1 eV	Th
e + HCO^+	Recombination	0.001−1 eV	Th
e + DCO^+	Recombination	0.001−1 eV	Th

1228. Yu. Ralchenko, I. N. Draganic, J. N. Tan, J. D. Gillaspy, J. M. Pomeroy, J. Reader, U. Feldman, G. E. Holland
EUV spectra of highly-charged ions $W^{54+} - W^{63+}$ relevant to ITER diagnostics.
J. Phys. B 41, 021003 (2008)

e + W^{54+}	Excitation	8.8−25 keV	Exp
e + W^{55+}	Excitation	8.8−25 keV	Exp
e + W^{56+}	Excitation	8.8−25 keV	Exp
e + W^{57+}	Excitation	8.8−25 keV	Exp
e + W^{58+}	Excitation	8.8−25 keV	Exp
e + W^{59+}	Excitation	8.8−25 keV	Exp
e + W^{60+}	Excitation	8.8−25 keV	Exp
e + W^{61+}	Excitation	8.8−25 keV	Exp
e + W^{62+}	Excitation	8.8−25 keV	Exp
e + W^{63+}	Excitation	8.8−25 keV	Exp

1229. S. Chen, R. P. McEachran, A. D. Stauffer
Ab initio optical potentials for elastic electron and positron scattering from the heavy noble gases.
J. Phys. B 41, 025201 (2008)

e + Kr	Elastic Scattering	20−100 eV	Th

1230. E. M. Staicu Casagrande, A. Naja, F. Mezdari, A. Lahmam-Bennani, P. Bolognesi, B. Joulakian, O. Chuluunbaatar, O. Al-Hagan, D. H. Madison, D. V. Fursa, I. Bray
(e,2e) ionization of helium and the hydrogen molecule: Signature of two-centre interference effects.
J. Phys. B 41, 025204 (2008)

e + He	Ionization	537−705 eV	Exp
e + H_2	Ionization	537−705 eV	Exp

1231. D. Shi, J. Sun, Y. Liu, Z. Zhu
Geometric shielding correction approach for total cross sections of electron scattering by C_6H_6, C_6F_6, C_6H_{12}, C_6H_{14}, C_6F_{14}, C_8H_{16}, C_8H_{18} and C_8F_{18} at 30-5000 eV.
J. Phys. B 41, 025205 (2008)

e + C_6H_6	Elastic Scattering	30−5000 eV	Th
e + C_6F_6	Elastic Scattering	30−5000 eV	Th
e + C_6H_{14}	Elastic Scattering	30−5000 eV	Th
e + C_6H_{12}	Elastic Scattering	30−5000 eV	Th
e + C_6F_{14}	Elastic Scattering	30−5000 eV	Th
e + C_8H_{16}	Elastic Scattering	30−5000 eV	Th
e + C_8H_{18}	Elastic Scattering	30−5000 eV	Th
e + C_8F_{18}	Elastic Scattering	30−5000 eV	Th
e + C_6H_6	Total Scattering	30−5000 eV	Th
e + C_6F_6	Total Scattering	30−5000 eV	Th
e + C_6H_{14}	Total Scattering	30−5000 eV	Th
e + C_6H_{12}	Total Scattering	30−5000 eV	Th
e + C_6F_{14}	Total Scattering	30−5000 eV	Th
e + C_8H_{16}	Total Scattering	30−5000 eV	Th

e + C_8H_{18}	Total Scattering	30−5000 eV	Th
e + C_8F_{18}	Total Scattering	30−5000 eV	Th
e + C_6H_6	Electron Collisions	30−5000 eV	Th
e + C_6F_6	Electron Collisions	30−5000 eV	Th
e + C_6H_{14}	Electron Collisions	30−5000 eV	Th
e + C_6H_{12}	Electron Collisions	30−5000 eV	Th
e + C_6F_{14}	Electron Collisions	30−5000 eV	Th
e + C_8H_{16}	Electron Collisions	30−5000 eV	Th
e + C_8H_{18}	Electron Collisions	30−5000 eV	Th
e + C_8F_{18}	Electron Collisions	30−5000 eV	Th

1232. H. Elabidi, N. Ben Nessib, M. Cornille, J. Dubau, S. Sahal-Brechot
Electron impact broadening of spectral lines in Be-like ions: Quantum calculations.
J. Phys. B 41, 025702 (2008)

e + Be	Line Broadening	2×10^4-24×10^4 K	Th

1233. B. Paripas, B. Palasthy, G. Vitez, Z. Berenyi
Post-collisioni interaction measured by coincidence spectrometry in the electron impact Auger process.
J. Phys. B 41, 035201 (2008)

e + Ar	Ionization	500 eV	E/T

1234. R. Choubisa, K. K. Sud
New geometry for the quasi-binary incident electron-centre of mass collision in (e,3e) process on He.
J. Phys. B 41, 035202 (2008)

e + He	Ionization	5600 eV	E/T

1235. V. I. Kelemen, M. M. Dovhanych, E. Yu. Remeta
Differential cross sections for elastic electron scattering by ytterbium atoms in the energy range 2-2000 eV: I. Real optical potential part approximation.
J. Phys. B 41, 035204 (2008)

e + Yb	Elastic Scattering	2−2000 eV	E/T
e + Yb	Angular Scattering	2−2000 eV	E/T

1236. U. Hitawala, G. Purohit, K. K. Sud
(e, 2e) triple differential cross sections of alkali and alkali earth atoms: Na, K and Mg, Ca.
J. Phys. B 41, 035205 (2008)

e + Na	Angular Scattering	10−25 eV	E/T
e + Mg	Angular Scattering	10−25 eV	E/T
e + K	Angular Scattering	10−25 eV	E/T
e + Ca	Angular Scattering	10−25 eV	E/T
e + Na	Ionization	10−25 eV	E/T
e + Mg	Ionization	10−25 eV	E/T
e + K	Ionization	10−25 eV	E/T
e + Ca	Ionization	10−25 eV	E/T

1237. A. Borovik, O. Zatsarinny, K. Bartschat
Near-threshold electron-impact excitation of the $(2p^5 3s^2)^2P_{3/2,1/2}$ autoionizing states in sodium.
J. Phys. B 41, 035206 (2008)

e + Na	Excitation	30−36 eV	E/T

1238. M. G. Levashova
The effect of collisions on the radiative cascade in Rydberg atoms.
J. Phys. B 41, 035701 (2008)

e + H	De-excitation	1−2000 eV	Th
e + H^*	De-excitation	1−2000 eV	Th
e + H	Fluorescence	1−2000 eV	Th
e + H^*	Fluorescence	1−2000 eV	Th

1239. Z. Felfli, A. Z. Msezane, D. Sokolovski
Simple method for electron affinity determination: Results for Ca, Sr and Ce.
J. Phys. B 41, 041001 (2008)

e + Ca	Attachment	0−8 eV	Th
e + Sr	Attachment	0−8 eV	Th
e + Ce	Attachment	0−8 eV	Th
e + Ca	Elastic Scattering	0−8 eV	Th
e + Sr	Elastic Scattering	0−8 eV	Th
e + Ce	Elastic Scattering	0−8 eV	Th
e + Ca	Angular Scattering	0−8 eV	Th
e + Sr	Angular Scattering	0−8 eV	Th
e + Ce	Angular Scattering	0−8 eV	Th

1240. J. Lecointre, J. J. Jureta, J.B.A. Mitchell, V. Ngassam, A. E. Orel, P. Defrance
Absolute cross sections and kinetic energy release distributions for electron-impact dissociative excitation and ionization of NeD^+.
J. Phys. B 41, 045201 (2008)

e + NeH^+	Dissociation	9−2495 eV	Exp
e + NeD^+	Dissociation	9−2495 eV	Exp
e + NeH^+	Excitation	9−2495 eV	Exp
e + NeD^+	Excitation	9−2495 eV	Exp
e + NeH^+	Ionization	9−2495 eV	Exp
e + NeD^+	Ionization	9−2495 eV	Exp

1241. H. Cho, Y. S. Park, E. A. y Castro, G.L.C. de Souza, I. Iga, L. E. Machado, L. M. Brescansin, M.-T. Lee
A comparative experimental-theoretical study on elastic electron scattering by methane.
J. Phys. B 41, 045203 (2008)

e + CH_4	Elastic Scattering	5−100 eV	E/T
e + CH_4	Angular Scattering	5−100 eV	E/T

1242. D. Bouchiha, L. G. Caron, J. D. Gorfinkiel, L. Sanche
Multiple scattering approach to elastic low-energy electron collisions with the water dimer.
J. Phys. B 41, 045204 (2008)

e + $(H_2O)_2$	Elastic Scattering	0−14 eV	Th

1243. H. P. Saha
Hartree-Fock results for electron impact ionization of H atoms.
J. Phys. B 41, 055201 (2008)

e + H	Angular Scattering	17.6 eV	Th
e + H	Ionization	17.6 eV	Th

1244. M. Hussey, A. Murray, W. MacGillivray, G. King
Low energy super-elastic scattering studies of calcium over the complete angular range using a magnetic angle changing device.
J. Phys. B 41, 055202 (2008)

e + Ca	De-excitation	40−55 eV	Exp
e + Ca*	De-excitation	40−55 eV	Exp
e + Ca	Elastic Scattering	40−55 eV	Exp
e + Ca	Excitation	40−55 eV	Exp

1245. P. Carsky, R. Curik
Vibrationally inelastic electron scattering in a two-channel approximation.
J. Phys. B 41, 055203 (2008)

e + $\mathbf{H_2}$	Elastic Scattering	1−20 eV	Th
e + $\mathbf{H_2O}$	Elastic Scattering	1−20 eV	Th
e + $\mathbf{CH_4}$	Elastic Scattering	1−20 eV	Th
e + $\mathbf{C_3H_6}$	Elastic Scattering	1−20 eV	Th
e + $\mathbf{H_2}$	Excitation	1−20 eV	Th
e + $\mathbf{H_2O}$	Excitation	1−20 eV	Th
e + $\mathbf{CH_4}$	Excitation	1−20 eV	Th
e + $\mathbf{C_3H_6}$	Excitation	1−20 eV	Th

1246. C. P. Ballance, D. C. Griffin
An R-matrix with pseudo states calculation of electron-impact excitation in Ar.
J. Phys. B 41, 065201 (2008)

e + Ar	Angular Scattering	11−24 eV	Th
e + Ar	Excitation	11−24 eV	Th

1247. J. M. Martinez, H.R.J. Walters, C. T. Whelan
The electron impact ionization of one- and two-electron atomc and ions close to the ionization threshold.
J. Phys. B 41, 065202 (2008)

e + H	Angular Scattering	13.7−1365 eV	Th
e + He	Angular Scattering	13.7−1365 eV	Th
e + $\mathbf{He^+}$	Angular Scattering	13.7−1365 eV	Th
e + $\mathbf{Li^+}$	Angular Scattering	13.7−1365 eV	Th
e + $\mathbf{Li^{2+}}$	Angular Scattering	13.7−1365 eV	Th
e + $\mathbf{Be^{2+}}$	Angular Scattering	13.7−1365 eV	Th
e + $\mathbf{Be^{3+}}$	Angular Scattering	13.7−1365 eV	Th
e + $\mathbf{Ne^{8+}}$	Angular Scattering	13.7−1365 eV	Th
e + $\mathbf{Ne^{9+}}$	Angular Scattering	13.7−1365 eV	Th
e + H	Ionization	13.7−1365 eV	Th
e + He	Ionization	13.7−1365 eV	Th
e + $\mathbf{He^+}$	Ionization	13.7−1365 eV	Th
e + $\mathbf{Li^+}$	Ionization	13.7−1365 eV	Th
e + $\mathbf{Li^{2+}}$	Ionization	13.7−1365 eV	Th
e + $\mathbf{Be^{2+}}$	Ionization	13.7−1365 eV	Th
e + $\mathbf{Be^{3+}}$	Ionization	13.7−1365 eV	Th
e + $\mathbf{Ne^{8+}}$	Ionization	13.7−1365 eV	Th
e + $\mathbf{Ne^{9+}}$	Ionization	13.7−1365 eV	Th

1248. P. Bolognesi, L. Pravica, S. Veronesi, E. Fainelli, L. Avaldi, K. Bartschat
An (e, 2e) study of the ionization and ionization-excitation of magnesium to the Mg^+ (3s), (3p) and (4s/3d) states.
J. Phys. B 41, 065203 (2008)

e + Mg	Excitation	400 eV	Th
e + Mg	Ionization	400 eV	Th

1249. H. Kawahara, H. Kato, M. Hoshino, H. Tanaka, L. Campbell, M. J. Brunger
Integral cross sections for electron impact excitation of the $^1\Sigma_u{}^+$ and $^1\Pi_u$ electronic states in CO_2.
J. Phys. B 41, 085203 (2008)

e + CO_2	Excitation	20−200 eV	E/T

1250. A. Naja, E. M. Staicu Casagrande, A. Lahmam-Bennani, M. Stevenson, B. Lohmann, C. Dal Cappello, K. Bartschat, A. Kheifets, I. Bray, D. V. Fursa
(e, 2e) triple differential cross-sections for ionization beyond helium: The neon case at large energy transfer.
J. Phys. B 41, 085205 (2008)

e + Ne	Angular Scattering	600 eV	E/T
e + He	Ionization	600 eV	E/T
e + Ne	Ionization	600 eV	E/T

1251. C. A. DeJoseph Jr., V. I. Demidov, J. Blessington
Comparison of helium two-step plasma emission with that predicted from measured cross sections.
J. Phys. B 41, 085701 (2008)

e + He	Elastic Scattering	17 eV	Exp

1252. J. Muse, H. Silva, M.C.A. Lopes, M. A. Khakoo
Low energy elastic scattering of electrons from H_2 and N_2.
J. Phys. B 41, 09503 (2008)

e + H_2	Elastic Scattering	1−30 eV	Exp
e + N_2	Elastic Scattering	1−30 eV	Exp

1253. J. Lecointre, J. J. Jureta, P. Defrance
Electron-impact ionization of singly-charged neon ions.
J. Phys. B 41, 095204 (2008)

e + Ne^+	Ionization	41−2500 eV	E/T

1254. A. Z. Msezane, Z. Felfli, D. Sokolovski
Near-threshold resonances in electron elastic scattering cross sections for Au and Pt atoms: Identification of electron affinities.
J. Phys. B 41, 105201 (2008)

e + Pt	Attachment	0−5 eV	Th
e + Au	Attachment	0−5 eV	Th
e + Pt	Elastic Scattering	0−5 eV	Th
e + Au	Elastic Scattering	0−5 eV	Th
e + Pt	Total Scattering	0−5 eV	Th
e + Au	Total Scattering	0−5 eV	Th

1255. R. Curik, P. Carsky, M. Allan
Vibrational excitation of methane by slow electrons revisited: Theoretical and experimental study.
J. Phys. B 41, 115203 (2008)

e + CH_4	Excitation	0−20 eV	E/T

1256. J. B. Boffard, B. Chiaro, T. Weber, C. C. Lin
Electron-impact excitation of argon: Optical emission cross sections in the range of 300-2500 nm.
At. Data Nucl. Data Tables 93, 831 (2007)

e + Ar	Excitation	25−100 eV	Exp

1257. J. Huang, Q. Zhao, G. Jiang
Energy levels, transition probabilities, and electron impact excitation collision strengths for Xe XXVII.
At. Data Nucl. Data Tables 93, 864 (2007)

e + Xe^{26+}	Excitation	10−1500 eV	Th

1258. E. Landi, A. K. Bhatia
Atomic data and spectral line intensities for S XIII.
At. Data Nucl. Data Tables 94, 1 (2007)

e + S^{12+}	Excitation	10−225 Ry	Th

1259. M. B. Trzhaskovskaya, V. K. Nikulin, R.E.H. Clark
Radiative recombination and photoionization cross sections for heavy element impurities in plasmas.
At. Data Nucl. Data Tables 94, 71 (2007)

e + Fe^{8+}	Recombination	4−50,000 eV	Th
e + Fe^{16+}	Recombination	4−50,000 eV	Th
e + Fe^{24+}	Recombination	4−50,000 eV	Th
e + Fe^{25+}	Recombination	4−50,000 eV	Th
e + Fe^{26+}	Recombination	4−50,000 eV	Th
e + Ni^{10+}	Recombination	4−50,000 eV	Th
e + Ni^{18+}	Recombination	4−50,000 eV	Th
e + Ni^{26+}	Recombination	4−50,000 eV	Th
e + Ni^{27+}	Recombination	4−50,000 eV	Th
e + Ni^{28+}	Recombination	4−50,000 eV	Th
e + Cu^{11+}	Recombination	4−50,000 eV	Th
e + Cu^{19+}	Recombination	4−50,000 eV	Th
e + Cu^{27+}	Recombination	4−50,000 eV	Th
e + Cu^{28+}	Recombination	4−50,000 eV	Th
e + Cu^{29+}	Recombination	4−50,000 eV	Th
e + Mo^{6+}	Recombination	4−50,000 eV	Th
e + Mo^{14+}	Recombination	4−50,000 eV	Th
e + Mo^{24+}	Recombination	4−50,000 eV	Th
e + Mo^{32+}	Recombination	4−50,000 eV	Th
e + Mo^{40+}	Recombination	4−50,000 eV	Th
e + Mo^{41+}	Recombination	4−50,000 eV	Th
e + Mo^{42+}	Recombination	4−50,000 eV	Th
e + W^{6+}	Recombination	4−50,000 eV	Th
e + W^{28+}	Recombination	4−50,000 eV	Th
e + W^{38+}	Recombination	4−50,000 eV	Th

e + W^{46+}	Recombination	4−50,000 eV	Th
e + W^{56+}	Recombination	4−50,000 eV	Th
e + W^{64+}	Recombination	4−50,000 eV	Th
e + W^{72+}	Recombination	4−50,000 eV	Th
e + W^{73+}	Recombination	4−50,000 eV	Th
e + W^{74+}	Recombination	4−50,000 eV	Th

1260. A. K. Bhatia, E. Landi
Atomic data and spectral line intensities for Ar XV.
At. Data Nucl. Data Tables 94, 223 (2007)

e + Ar^{14+}	Excitation	10−300 Ry	Th

1261. S. D. Loch, M. S. Pindzola, C. P. Ballance, D. C. Griffin, J. Colgan, N. R. Badnell, M. G. O'Mullane, H. P. Summers
Generalized collisional radiative model for light elements. Part B: Data for the Be isonuclear sequence.
At. Data Nucl. Data Tables 94, 257 (2007)

e + Be	Excitation	0.1−10,000 eV	Th
e + Be^{+}	Excitation	0.1−10,000 eV	Th
e + Be^{2+}	Excitation	0.1−10,000 eV	Th
e + Be^{3+}	Excitation	0.1−10,000 eV	Th
e + Be	Ionization	0.1−10,000 eV	Th
e + Be^{+}	Ionization	0.1−10,000 eV	Th
e + Be^{2+}	Ionization	0.1−10,000 eV	Th
e + Be^{3+}	Ionization	0.1−10,000 eV	Th

1262. Yu. Ralchenko, R. K. Janev, T. Kato, D. V. Fursa, I. Bray, F. J. de Heer
Electron-impact excitation and ionization cross sections for ground state and excited helium atoms.
At. Data Nucl. Data Tables 94, 603 (2007)

e + He	Excitation	10^{-1}-10^{5} eV	E/T
e + He^{*}	Excitation	10^{-1}-10^{5} eV	E/T
e + He	Ionization	10^{-1}-10^{5} eV	E/T
e + He^{*}	Ionization	10^{-1}-10^{5} eV	E/T

1263. Z. Altun, A. Yumak, I. Yavuz, N. R. Badnell, S. D. Loch, M. S. Pindzola
Dielectronic recombination data for dynamic finite-density plasmas. XIII. The magnesium isoelectronic sequence.
Astron. Astrophys. 474, 1051 (2007)

e + Al^{+}	Recombination	10^{2}-10^{7} K	Th
e + Si^{2+}	Recombination	10^{2}-10^{7} K	Th
e + P^{3+}	Recombination	10^{2}-10^{7} K	Th
e + S^{4+}	Recombination	10^{2}-10^{7} K	Th
e + Cl^{5+}	Recombination	10^{2}-10^{7} K	Th
e + Ar^{6+}	Recombination	10^{2}-10^{7} K	Th
e + K^{7+}	Recombination	10^{2}-10^{7} K	Th
e + Ca^{8+}	Recombination	10^{2}-10^{7} K	Th
e + Sc^{9+}	Recombination	10^{2}-10^{7} K	Th
e + Ti^{10+}	Recombination	10^{2}-10^{7} K	Th
e + V^{11+}	Recombination	10^{2}-10^{7} K	Th
e + Cr^{12+}	Recombination	10^{2}-10^{7} K	Th
e + Mn^{13+}	Recombination	10^{2}-10^{7} K	Th
e + Fe^{14+}	Recombination	10^{2}-10^{7} K	Th

e + Co^{15+}	Recombination	10^2-10^7 K	Th
e + Ni^{16+}	Recombination	10^2-10^7 K	Th
e + Cu^{17+}	Recombination	10^2-10^7 K	Th
e + Zn^{18+}	Recombination	10^2-10^7 K	Th
e + Kr^{24+}	Recombination	10^2-10^7 K	Th
e + Mo^{30+}	Recombination	10^2-10^7 K	Th
e + Xe^{42+}	Recombination	10^2-10^7 K	Th

1264. C. A. Ramsbottom, C. E. Hudson, P. H. Norrington, M. P. Scott
Electron-impact excitation of Fe II. Collision strengths and effective collision strengths for low-lying fine-structure forbidden transitions.
Astron. Astrophys. 475, 765 (2007)

e + Fe^{+}	Excitation	30-10^5 K	Th

1265. K. M. Aggarwal, F. P. Keenan
Energy levels, radiative rates and excitation rates for transitions in Ni XI.
Astron. Astrophys. 475, 393 (2007)

e + Ni^{10+}	Excitation	10^2-10^7 K	Th

1266. K. M. Aggarwal, A. Igarashi, F. P. Keenan, S. Nakazaki
Effective collision strengths for allowed transitions among the n $\leq$ 5 degenerate levels of Al XIII.
Astron. Astrophys. 479, 585 (2008)

e + Al^{12+}	Excitation	4.4−6.8 log T K	Th
e + Al^{12+*}	Excitation	4.4−6.8 log T K	Th

1267. M. C. Witthoeft, N. R. Badnell
Atomic data from the IRON Project. LXV. Electron-impact excitation of Fe^{6+}.
Astron. Astrophys. 481, 543 (2008)

e + Fe^{6+}	Excitation	10^4-10^8 K	Th

1268. M. F. Gu, H. Chen, G. V. Brown, P. Beiersdorfer, S. M. Kahn
Laboratory measurements of 3 -¿ 2 X-ray line ratios of F-like Fe XVIII and Ni XX.
Astrophys. J. 670, 1504 (2007)

e + Fe^{17+}	Excitation	17−12 $\AA$	E/T
e + Ni^{19+}	Excitation	17−12 $\AA$	E/T

1269. Y.-D. Jung
Double ionization of H^- ions by electron impact in the solar atmosphere.
Astrophys. J. 674, 1207 (2008)

e + H^-	Ionization	0.0−1.0 Ry	Th

1270. M. Kaminska, E. Vigren, V. Zhaunerchyk, W. D. Geppert, H. Roberts, C. Walsh, T. J. Millar, M. Danielsson, M. Hamberg, R. D. Thomas, M. Larsson, M. af Ugglas, J. Semaniak
Dissociative recombination of D_3S^+: Product branching fractions and absolute cross sections.
Astrophys. J. 681, 1717 (2008)

e + D_3S^+	Dissociation	0.0−0.1 eV	Exp
e + H_3S^+	Dissociation	0.0−0.1 eV	Exp
e + D_3S^+	Recombination	0.0−0.1 eV	Exp
e + H_3S^+	Recombination	0.0−0.1 eV	Exp

1271. D. H. Shi, J. F. Sun, Z. L. Zhu, H. Ma, Y. F. Liu
Geometric shielding corrections for total cross section calculations of electron scattering by CH_4, C_2H_6, $C_2H_3F_3$, C_2H_4, C_2F_4, C_2Cl_4 and $C_2Cl_2F_2$ from 30-5000 eV.
Eur. Phys. J. D 45, 253 (2007)

e + CH_4	Elastic Scattering	30−5000 eV	E/T
e + CH_4	Electron Collisions	30−5000 eV	E/T

1272. S. Fonseca dos Santos, V. Kokoouline
Dissociative recombination of $H_3{}^+$ in the ground and excited vibrational states.
J. Chem. Phys. 127, 124309 (2007)

e + $H_3{}^+$	Dissociation	10^{-4}-1.0 eV	Th
e + $H_3{}^+$	Recombination	10^{-4}-1.0 eV	Th

1273. M. Tarana, J. Horacek
Correlation effects in R-matrix calculations of $electron - F_2$ elastic scattering cross sections.
J. Chem. Phys. 127, 154319 (2007)

e + F_2	Elastic Scattering	0.0−12.0 eV	Th

1274. K. M. Aggarwal, F. P. Keenan
Comment, "Electron collisional excitation of argon-like Ni XI using the Breit-Pauli R-matrix method" - [Eur. Phys. J. D 42, 235-241 (2007)] Electron impact excitation of Ni XI.
Eur. Phys. J. D 46, 205 (2008)

e + Ni^{10+}	Excitation	0−200 Ry	Th
e + Ni^{10+}	Ionization	0−200 Ry	Th

1275. M.Z.M. Kamali, K. Ratnavelu, Y. Zhou
Electron impact excitation of 2p and 3p states of hydrogen at intermediate energies.
Eur. Phys. J. D 46, 267 (2008)

e + H	Angular Scattering	20−200 eV	Th
e + H	Excitation	20−200 eV	Th

1276. M. R. Talukder, S. Bose, M.A.R. Patoary, A.K.F. Haque, M. A. Uddin, A. K. Basak, M. Kando
Empirical model for electron impact ionization cross sections of neutral atoms.
Eur. Phys. J. D 46, 281 (2008)

e + H	Ionization	0−10,000 eV	Th
e + A	Ionization	0−10,000 eV	Th

1277. S. Bhattacharya, K. B. Choudhury, N. C. Deb, C. Sinha, K. Roy, A. Z. Msezane
Ionization of sodium by the impact of alpha particle.
Eur. Phys. J. D 47, 335 (2008)

e + Na	Ionization	2−100 keV/u	Th

1278. J. P. Santos, F. Parente
Ionisation of phosphorus, arsenic, antimony, and bismuth by electron impact.
Eur. Phys. J. D 47, 339 (2008)

e + P	Ionization	8−5000 eV	Th
e + As	Ionization	8−5000 eV	Th
e + Sb	Ionization	8−5000 eV	Th
e + Bi	Ionization	8−5000 eV	Th

1279. M.-Y. Song, T. Kato, D. Kato, I. Murakami, Y. Ralchenko
Total and partial dielectronic and radiative recombination of Xe^{10+} ions.
J. Phys. Soc. Japan 77, 064302 (2008)

e + Xe^{10+}	Recombination	1−1000 eV	Th

1280. D. J. Pegg
Correlated processes in negative ions.
Nucl. Instrum. Methods Phys. Res. B 261, 138 (2007)

e + H^-	Detachment	0−170 eV	Exp

1281. D. Nikolic, T. W. Gorczyca, J. Fu, D. W. Savin, N. R. Badnell
Steps toward dielectronic recombination of argon-like ions: A revisited theoretical investigation of Sc^{3+} and Ti^{4+}.
Nucl. Instrum. Methods Phys. Res. B 261, 145 (2007)

e + Sc^{3+}	Recombination	0−45 eV	Th
e + Ti^{4+}	Recombination	0−45 eV	Th

1282. R. D. Rivarola
Coherent electron emission from molecular targets.
Nucl. Instrum. Methods Phys. Res. B 261, 161 (2007)

e + H_2	Ionization	60 MeV; 2.4 keV; 0−20 a.u.	Th
e + D_2	Ionization	60 MeV; 2.4 keV; 0−20 a.u.	Th

1283. O. G. de Lucio, R. D. DeBois, J. Gavin
Differential ionization of Ar by positron and electron impact.
Nucl. Instrum. Methods Phys. Res. B 261, 892 (2007)

e + Ar	Angular Scattering	500 eV	Exp
e + Ar	Ionization	500 eV	Exp

1284. S. Otranto, R. E. Olson
CDW theoretical description of the single ionization of argon by positron and electron impact.
Nucl. Instrum. Methods Phys. Res. B 261, 896 (2007)

e + Ar	Angular Scattering	200 eV	Th
e + Ar	Ionization	200 eV	Th

1285. R. Dey, A. C. Roy, C. Dal Cappello
Electron impact single ionization of helium with large energy transfer.
Nucl. Instrum. Methods Phys. Res. B 266, 242 (2008)

e + He	Angular Scattering	730 eV	Th
e + He	Ionization	730 eV	Th

1286. K. Ohya, K. Inai, A. Nisawa, A. Itoh
Emission statistics of X-ray induced photoelectrons and its comparison with electron- and ion-induced electron emissions.
Nucl. Instrum. Methods Phys. Res. B 266, 541 (2008)

e + Au	Ionization	1−100 keV	Th

1287. C. Dal Cappello, A. C. Roy, X. G. Ren, R. Dey
Simultaneous ionization and excitation of helium by electron impact.
Nucl. Instrum. Methods Phys. Res. B 266, 570 (2008)

e + He	Excitation	1000−1600 eV	Th
e + He	Ionization	1000−1600 eV	Th

1288. C. Bousis, D. Emfietzoglou, P. Hadjidoukas, H. Nikjoo, A. Pathak
Electron ionization cross-section calculations for liquid water at high impact energies.
Nucl. Instrum. Methods Phys. Res. B 266, 1185 (2008)

e + H_2O	Ionization	10^{-2}-1 MeV	Th

1289. A. Jablonski, C. J. Powell
Improved algorithm for calculating transport cross sections of electrons with energies from 50 eV to 30 keV.
Phys. Rev. B 76, 085123 (2007)

e + A	Elastic Scattering	0.05−30 keV	Th
e + A	Angular Scattering	0.05−30 keV	Th

1290. J. Rundgren
Elastic electron-atom scattering in amplitude-phase representation with application to electron diffraction and spectroscopy.
Phys. Rev. B 76, 195441 (2007)

e + Be	Elastic Scattering	20-10^4 eV	Th
e + Cu	Elastic Scattering	20-10^4 eV	Th
e + Au	Elastic Scattering	20-10^4 eV	Th

1291. D. V. Fursa, I. Bray
Fully relativistic convergent close-coupling method for excitation and ionization processes in electron collisions with atoms and ions.
Phys. Rev. Lett. 100, 113201 (2007)

e + Cs	Elastic Scattering	7 eV	Th
e + Cs	Excitation	7 eV	Th
e + Cs	Ionization	7 eV	Th

1292. L. K. Jha, S. Kumar, O. P. Roy, P. Kumar
Single and double ionization of Kr and Xe by electron impact.
Phys. Scr. 77, 015304 (2008)

e + Kr	Ionization	18−500 eV	Exp
e + Xe	Ionization	18−500 eV	Exp

1293. Z. Altun, A. Yumak, U. Golcek, S. D. Loch, M. S. Pindzola, D. C. Griffin
Electron-impact ionization of atomic ions in the Na isoelectronic sequence.
Phys. Scr. 78, 25304 (2008)

e + Mg^{+}	Ionization	0−50 keV	Th
e + Ar^{7+}	Ionization	0−50 keV	Th
e + Kr^{25+}	Ionization	0−50 keV	Th
e + Sn^{39+}	Ionization	0−50 keV	Th
e + Xe^{43+}	Ionization	0−50 keV	Th
e + W^{63+}	Ionization	0−50 keV	Th

1294. F. A. Gianturco
Quenching of internally 'hot' H_2 and N_2 gases by collisions with ultracold electrons: A computational 'experiment.'
Phys. Scr. 78, 058102 (2008)

e + H_2	De-excitation	10^{-6}-1 eV	Th
e + N_2	De-excitation	10^{-6}-1 eV	Th

1295. Y. K. Hahn, E. Zerrad
Hypervirial theorems for atomic bound and scattering states.
J. Phys. B 41, 015003 (2008)

e + H	Elastic Scattering	0.4 a.u.	Th

1296. P. Bolognesi, H. Bohachov, V. Borovik, S. Veronesi, R. Flammini, E. Fainelli, A. Borovik, J. Martinez, C. T. Whelan, H.R.J. Walters, A. Kheifets, L. Avaldi
The ionization of Mg by electron impact at 1000 eV studied by (e, 2e) experiments.
J. Phys. B 41, 015201 (2008)

e + He	Ionization	1 keV	E/T
e + Mg	Ionization	1 keV	E/T

1297. Y. K. Hahn, E. Zerrad
Electron scattering by magnesium: Excitation of the 3s4s $^1S_0$, 3s3d $^1D_2$ and 3s4p $^1P_1$ states.
J. Phys. B 41, 015202 (2008)

e + Mg	Angular Scattering	10−60 eV	Exp
e + Mg	Total Scattering	10−60 eV	Exp
e + Mg	Excitation	10−60 eV	Exp

1298. O. Chuluunbaatar, B. B. Joulakian, I. V. Puzynin, Kh. Tsookhuu, S. I. Vinitsky
Modified two-centre continuum wavefunction: Application to the dissociative double ionization of H_2 by electron impact.
J. Phys. B 41, 015204 (2008)

e + H_2	Dissociation	612 eV	Th
e + H_2	Angular Scattering	612 eV	Th
e + H_2	Ionization	612 eV	Th

1299. K. M. Aggarwal, F. P. Keenan
Effective collision strengths for inner shell transitions of Fe XVI.
J. Phys. B 41, 015701 (2008)

e + Fe^{15+}	Excitation	740−7800 eV; 5000−1,000,000 K	Th

1300. Y. Ishikawa, M. J. Vilkas
Relativistic R-matrix close-coupling method based on the effective many-body Hamiltonian: Benchmarks on the electron-impact excitations of the Kr^{6+} ion.
Phys. Rev. A 77, 052701 (2008)

e + Kr^{6+}	Excitation	1.05−1.35 Ry	E/T

1301. A. K. Bhatia
Applications of the hybrid theory to the scattering of electrons from He^+ and Li^{2+} and resonances in these systems.
Phys. Rev. A 77, 052707 (2008)

e + He^+	Elastic Scattering	0.1−1.6 Ry	Th
e + Li^{2+}	Elastic Scattering	0.1−1.6 Ry	Th
e + He^+	Angular Scattering	0.1−1.6 Ry	Th
e + Li^{2+}	Angular Scattering	0.1−1.6 Ry	Th

1302. M. Becher, B. Joulakian, C. Le Sech, M. Chrysos
K-shell and L-shell (e, 3e) double ionization of beryllium by fast electron impact.
Phys. Rev. A 77, 052710 (2008)

e + Be	Ionization	0−500 keV	Th

1303. O. Motapon, F.O.W. Tamo, X. Urbain, I. F. Schneider
Decisive role of rotational couplings in the dissociative recombination and superelastic collisions of $H_2{}^+$ with low-energy electrons.
Phys. Rev. A 77, 052711 (2008)

e + $H_2{}^+$	Dissociation	0−180 meV	E/T
e + $H_2{}^+$	De-excitation	0−180 meV	E/T
e + $H_2{}^+$	Elastic Scattering	0−180 meV	E/T
e + $H_2{}^+$	Recombination	0−180 meV	E/T

1304. S. Paul
Hyperspherical partial wave theory with two-term error correction.
Phys. Rev. A 77, 052714 (2008)

e + H	Ionization	0.0075−0.01 a.u.	Th

1305. P. Bolognesi, L. Pravica, S. Veronesi, E. Fainelli, J. Martinez, H.R.J. Walters, C. T. Whelan, H. Bohachov, A. Borovik, L. Avaldi
Mg 2p ionization by electron impact.
Phys. Rev. A 77, 054704 (2008)

e + Mg	Ionization	400−1000 eV	E/T

1306. J. A. del Val, R. J. Pelaez, S. Mar, F. Rodriguez, V. R. Gonzalez, A. B. Gonzalo, A. del Castro, J. A. Aparicio
Stark widths, shifts, and regularities for Kr II visible spectral lines.
Phys. Rev. A 77, 012501 (2008)

e + Kr^+	Line Broadening	16,000−28,000 K	Exp

1307. M. A. Khakoo, C. P. Malone, P. V. Johnson, B. R. Lewis, R. Laher, S. Wang, V. Swaminathan, D. Nuyujukian, I. Kanik
Electron-impact excitation of X $^1\Sigma_g{}^+(v" = 0)$ to the a" $^1\Sigma_g{}^+$, b $^1\Pi_u$, c_3 $^1\Pi_u$, o_3 $^1\Pi_u$, b' $^1\Sigma_u{}^+$, c_4' $^1\Sigma_u{}^+$, G $^3\Pi_u$, and F $^3\Pi_u$ states of molecular nitrogen.
Phys. Rev. A 77, 012704 (2008)

e + N_2	Angular Scattering	17.5−100 eV	Exp
e + N_2	Excitation	17.5−100 eV	Exp

1308. K. Houfek, T. N. Rescigno, C. W. McCurdy
Probing the nonlocal approximation to resonant collisions of electrons with diatomic molecules.
Phys. Rev. A 77, 012710 (2008)

e + F_2	Dissociation	0−5.4 eV	Th
e + N_2	Elastic Scattering	0−5.4 eV	Th
e + NO	Elastic Scattering	0−5.4 eV	Th
e + F_2	Elastic Scattering	0−5.4 eV	Th
e + N_2	Excitation	0−5.4 eV	Th
e + NO	Excitation	0−5.4 eV	Th
e + F_2	Excitation	0−5.4 eV	Th

1309. H. Kawahara, H. Kato, M. Hoshino, H. Tanaka, M. J. Brunger
Excitation of the C $^1\Sigma^+$ + c $^3\Pi$ and E $^1\Pi$ electronic states of carbon monoxide by electron impact.
Phys. Rev. A 77, 012713 (2008)

e + CO	Angular Scattering	30−200 eV	E/T
e + CO	Excitation	30−200 eV	E/T

1310. R. Celiberto, R. K. Janev, J. M. Wadehra, A. Laricchiuta
Cross sections for 11-14-eV $e - H_2$ resonant collisions: Vibrational excitation.
Phys. Rev. A 77, 012714 (2008)

e + H_2	Angular Scattering	11−14 eV	Th
e + H_2	Excitation	11−14 eV	Th

1311. R. F. da Costa, M.H.F. Bettega, M.A.P. Lima
Polarization effects on electronic excitation of molecules by low-energy electron impact: Study of $e^- - furan$ scattering.
Phys. Rev. A 77, 012717 (2008)

e + C_4H_4O	Excitation	0−7 eV	Th

1312. M. Tashiro
Exchange effects in elastic collisions of spin-polarized electrons with open-shell molecules with $^3\Sigma_g{}^-$ symmetry.
Phys. Rev. A 77, 012723 (2008)

e + O_2	Elastic Scattering	0−17 eV	Th
e + S_2	Elastic Scattering	0−17 eV	Th
e + B_2	Elastic Scattering	0−17 eV	Th
e + Si_2	Elastic Scattering	0−17 eV	Th
e + O_2	Angular Scattering	0−17 eV	Th
e + S_2	Angular Scattering	0−17 eV	Th
e + B_2	Angular Scattering	0−17 eV	Th
e + Si_2	Angular Scattering	0−17 eV	Th

1313. S. D. Tosic, M. S. Rabasovic, D. Sevic, V. Pejcev, D. M. Filipovic, L. Sharma, A. N. Tripathi, R. Srivastava, B. P. Marinkovic
Elastic electron scattering by a Pb atom.
Phys. Rev. A 77, 012725 (2008)

e + Pb	Elastic Scattering	10−100 eV	E/T
e + Pb	Angular Scattering	10−100 eV	E/T
e + Pb	Total Scattering	10−100 eV	E/T

1314. A. N. Feldt, M. A. Morrison
Analytic Born completion in the calculation of differential cross sections for electron scattering from a linear molecule.
Phys. Rev. A 77, 012726 (2008)

e + H_2	Elastic Scattering	1−10 eV	Th
e + N_2	Elastic Scattering	1−10 eV	Th
e + H_2	Angular Scattering	1−10 eV	Th
e + N_2	Angular Scattering	1−10 eV	Th
e + H_2	Excitation	1−10 eV	Th
e + N_2	Excitation	1−10 eV	Th

1315. O. May, J. Fedor, B. C. Ibanescu, M. Allan
Absolute cross sections for dissociative electron attachment to acetylene and diacetylene.
Phys. Rev. A 77, 040701 (2008)

e + C_2H_2	Attachment	0−16 eV	Exp
e + C_4H_2	Attachment	0−16 eV	Exp
e + C_2H_2	Dissociation	0−16 eV	Exp
e + C_4H_2	Dissociation	0−16 eV	Exp

1316. D. Bote, F. Salvat
Calculations of inner-shell ionization by electron impact with the distorted-wave and plane-wave Born approximations.
Phys. Rev. A 77, 042701 (2008)

e + Al	Ionization	10^2-10^9 eV	Th
e + Ar	Ionization	10^2-10^9 eV	Th
e + Ti	Ionization	10^2-10^9 eV	Th
e + Cr	Ionization	10^2-10^9 eV	Th
e + Ni	Ionization	10^2-10^9 eV	Th
e + Cu	Ionization	10^2-10^9 eV	Th
e + Ge	Ionization	10^2-10^9 eV	Th
e + Sr	Ionization	10^2-10^9 eV	Th
e + Ag	Ionization	10^2-10^9 eV	Th
e + Xe	Ionization	10^2-10^9 eV	Th
e + W	Ionization	10^2-10^9 eV	Th
e + Au	Ionization	10^2-10^9 eV	Th
e + Pb	Ionization	10^2-10^9 eV	Th
e + Bi	Ionization	10^2-10^9 eV	Th
e + U	Ionization	10^2-10^9 eV	Th

1317. Z. An, Q. Hou
Inverse problem in the thick-target method of measurements of inner-shell ionization cross sections by electron or positron impact.
Phys. Rev. A 77, 042702 (2008)

e + Ni	Ionization	8−100 keV	Th

1318. M. A. Khakoo, J. Blumer, K. Keane, C. Campbell, H. Silva, M.C.A. Lopes, C. Winstead, V. McKoy, R. F. da Costa, L. G. Ferreira, M.A.P. Lima, M.H.F. Bettega
Low-energy electron scattering from methanol and ethanol.
Phys. Rev. A 77, 042705 (2008)

e + C_2H_5OH	Elastic Scattering	1−100 eV	E/T
e + CH_3OH	Elastic Scattering	1−100 eV	E/T
e + C_2H_5OH	Angular Scattering	1−100 eV	E/T
e + CH_3OH	Angular Scattering	1−100 eV	E/T

1319. V. Ngassam, A. I. Florescu-Mitchell, A. E. Orel
Electron-induced resonant dissociation and excitation of NeH^+ and NeD^+.
Phys. Rev. A 77, 042706 (2008)

e + NeH^+	Dissociation	1−19.5 eV	Th
e + NeD^+	Dissociation	1−19.5 eV	Th
e + NeH^+	Recombination	1−19.5 eV	Th
e + NeD^+	Recombination	1−19.5 eV	Th
e + NeH^+	Excitation	1−19.5 eV	Th
e + NeD^+	Excitation	1−19.5 eV	Th

1320. S. T. Chourou, A. E. Orel
Dissociative electron attachment to acetylene.
Phys. Rev. A 77, 042709 (2008)

e + C_2H_2	Attachment	0−7 eV	Th
e + C_2H_2	Dissociation	0−7 eV	Th

1321. M. Allan, C. Winstead, V. McKoy
Electron scattering in ethene: Excitation of the $\tilde{(a)}$ $^3B_{1u}$ state, elastic scattering, and vibrational excitation.
Phys. Rev. A 77, 042715 (2008)

e + C_2H_4	Elastic Scattering	0−20 eV	E/T
e + C_2H_4	Angular Scattering	0−20 eV	E/T
e + C_2H_4	Excitation	0−20 eV	E/T

1322. C. Makochekanwa, M. Hoshino, H. Kato, O. Sueoka, M. Kimura, H. Tanaka
Electron and positron scattering cross sections for propene and cyclopropane.
Phys. Rev. A 77, 042717 (2008)

e + C_3H_6	Excitation	0.2−1000 eV	Exp
e + C-C_3H_6	Excitation	0.2−1000 eV	Exp

1323. R. F. da Costa, M.H.F. Bettega, M.A.P. Lima
Polarization effects on electronic excitation of the $\tilde{a}$ $^3B_{1u}$ state of ethylene by low-energy electron impact.
Phys. Rev. A 77, 042723 (2008)

e + C_2H_4	Angular Scattering	3−8 eV	Th
e + C_2H_4	Excitation	3−8 eV	Th

1324. L. G. Gerchikov, G. F. Gribakin
Electron attachment to SF_6 and lifetimes of $SF_6{}^-$ negative ions.
Phys. Rev. A 77, 042724 (2008)

e + SF_6	Attachment	0.1−1000 MeV	Th

1325. R. Flammini, E. Fainelli, F. Maracci, L. Avaldi
Vinylidene dissociation following the Auger-electron decay of inner-shell ionized acetylene.
Phys. Rev. A 77, 044701 (2008)

e + C_2H_2	Dissociation	300−400 eV	Exp
e + C_2H_2	Excitation	300−400 eV	Exp
e + C_2H_2	Ionization	300−400 eV	Exp

1326. M. Ave, M. Bohacova, B. Buonomo, N. Busca, L. Cazon, S. D. Chemerisov, M. E. Conde, R. A. Crowell, P. Di Carlo, C. Di Giulio, M. Doubrava, A. Esposito, P. Facal, F. J. Franchini, J. Hoerandel, M. Hrabovsky, M. Iarlori, T. E. Kasprzyk, B. Keilhauer, H. Klages, M. Kleifges, S. Kuhlmann, G. Mazzitelli, L. Nozka, A. Obermeier, M. Palatka, S. Petrera, P. Privitera, J. Ridky, V. Rizi, G. Rodriguez, F. Salamida, P. Schovanek, H. Spinka, E. Strazzeri, A. Ulrich,

Z. M. Yusof, V. Vacek, P. Valente, V. Verzi, T. Waldenmaier
Spectrally resolved pressure dependence measurements of air fluorescence emission with AIRFLY.
Nucl. Instrum. Methods Phys. Res. A 597, 41 (2008)

e + N_2	Fluorescence	3 MeV; 300 deg K	Exp

1327. M. Ave, M. Bohacova, B. Buonomo, N. Busca, L. Cazon, S. D. Chemerisov, M. E. Conde, R. A. Crowell, P. Di Carlo, C. Di Giulio, M. Doubrava, A. Esposito, P. Facal, F. J. Franchini, J. Gebhardt, T. Graber, J. Hoerandel, M. Hrabovsky, M. Iarlori, T. E. Kasprzyk, B. Keilhauer, H. Klages, M. Kleifges, S. Kuhlmann, G. Mazzitelli, M. Meron, L. Nozka, A. Obermeier, M. Palatka, S. Petrera, P. Privitera, J. Ridky, V. Rizi, G. Rodriguez, F. Salamida, P. Schovanek, H. Spinka, E. Strazzeri, A. Ulrich, Z. M. Yusof, V. Vacek, P. Valente, V. Verzi, J. Viccaro, T. Waldenmaier
Energy dependence of air fluorescence yield measured by AIRFLY.
Nucl. Instrum. Methods Phys. Res. A 597, 46 (2008)

e + N_2	Fluorescence	0.5−420 MeV	Exp

1328. B. Buonomo, N. Busca, L. Cazon, S. D. Chemerisov, M. E. Conde, R. A. Crowell, P. Di Carlo, C. Di Giulio, M. Doubrava, A. Esposito, P. Facal, F. J. Franchini, J. Hoerandel, M. Hrabovsky, M. Iarlori, T. E. Kasprzyk, B. Keilhauer, H. Klages, M. Kleifges, S. Kuhlmann, G. Mazzitelli, L. Nozka, A. Obermeier, M. Palatka, S. Petrera, P. Privitera, J. Ridky, V. Rizi, G. Rodriguez, F. Salamida, P. Schovanek, H. Spinka, E. Strazzeri, A. Ulrich, Z. M. Yusof, V. Vacek, P. Valente, V. Verzi, T. Waldenmaier, M. Ave, M. Bohacova
Temperature and humidity dependence of air fluorescence yield measured by AIRFLY.
Nucl. Instrum. Methods Phys. Res. A 597, 50 (2008)

e + N_2	Fluorescence	3 MeV	Exp

1329. M. Ave, M. Bohacova, B. Buonomo, N. Busca, L. Cazon, S. D. Chemerisov, M. E. Conde, R. A. Crowell, P. Di Carlo, C. Di Giulio, M. Doubrava, A. Esposito, P. Facal, F. J. Franchini, J. Hoerandel, M. Hrabovsky, M. Iarlori, T. E. Kasprzyk, B. Keilhauer, H. Klages, M. Kleifges, S. Kuhlmann, G. Mazzitelli, L. Nozka, A. Obermeier, M. Palatka, S. Petrera, P. Privitera, J. Ridky, V. Rizi, G. Rodriguez, F. Salamida, P. Schovanek, H. Spinka, E. Strazzeri, A. Ulrich, Z. M. Yusof, V. Vacek, P. Valente, V. Verzi, T. Waldenmaier
A novel method for the absolute fluorescence yield measurement by AIRFLY.
Nucl. Instrum. Methods Phys. Res. A 597, 55 (2008)

e + N_2	Fluorescence	14−350 MeV	Exp

1330. T. Waldenmaier, J. Blumer, D. M. Gonzalez, H. Klages
Measurement of the air fluorescence yield with the airlight experiment.
Nucl. Instrum. Methods Phys. Res. A 597, 67 (2008)

e + N_2	Fluorescence	250−2000 keV	Exp

1331. J. Rosado, F. Blanco, F. Arqueros, M. Ortiz
Measurements of air fluorescence induced by low-energy electrons at low pressures.
Nucl. Instrum. Methods Phys. Res. A 597, 83 (2008)

e + N_2	Fluorescence	30 keV	Exp

1332. N. Sakaki, Y. Watanabe, M. Nagano, K. Kobayakawa
Fluorescence in air excited by electrons from a ^{90}Sr source.
Nucl. Instrum. Methods Phys. Res. A 597, 88 (2008)

e + N_2	Fluorescence	0.85 MeV	Exp

1333. F. Arqueros, F. Blanco, J. Rosado
Improved model for the analysis of air fluorescence induced by electrons.
Nucl. Instrum. Methods Phys. Res. A 597, 94 (2008)

e + N_2	Fluorescence	1×10^0-1×10^{10} eV	Th

1334. B. Keilhauer, J. Blumer, R. Engel, H. O. Klages
Altitude dependence of fluorescence light emission by extensive air showers.
Nucl. Instrum. Methods Phys. Res. A 597, 99 (2008)

e + N_2	Fluorescence	0.85 MeV	Th

1335. A. Morozov, T. Heindl, J. Wieser, R. Kruecken, A. Ulrich
Collisionial population channels of the C $^3\Pi_u$ state and their impact on the fluorescence analysis of extensive air showers.
Nucl. Instrum. Methods Phys. Res. A 597, 105 (2008)

e + N_2	Fluorescence	10 keV; 300 deg K	Exp

1336. M. A. Nelson, L. A. Triplett, J. J. Colman, R. Roussel-Dupre
Comparison of a model for air fluorescence via electron beam excitation with experimental data.
Nucl. Instrum. Methods Phys. Res. A 597, 110 (2008)

e + N_2	Fluorescence	50 keV; 300 deg K	E/T

1337. M. Fifirig, M. Stroe
Dissociative excitation in electron collisions with HD^+.
Phys. Scr. 78, 065302 (2008)

e + H_2^+	Dissociation	2−12 eV	Th
e + HD^+	Dissociation	2−12 eV	Th
e + H_2^+	Excitation	2−12 eV	Th
e + HD^+	Excitation	2−12 eV	Th

1338. S. S. Tayal
Electron impact excitation collision strength for transitions in C II.
Astron. Astrophys. 486, 629 (2008)

e + C^+	Excitation	0-10^6 K	Th

1339. K. M. Aggarwal, F. P. Keenan
Energy levels, radiative rates, and excitation rates for transitions in O IV.
Astron. Astrophys. 486, 1053 (2008)

e + O^{3+}	Excitation	0-10^6 K	Th

1340. K. M. Aggarwal, K. Hamada, A. Igarashi, V. Jonauskas, F. P. Keenan, S. Nakazaki
Radiative rates and electron impact excitation rates for H-like Ar XVIII.
Astron. Astrophys. 487, 383 (2008)

e + Ar^{17+}	Excitation	0−800 Ry	Th

1341. G. Del Zanna, I. Rozum, N. R. Badnell
Electron-impact excitation of Be-like Mg.
Astron. Astrophys. 487, 1203 (2008)

e + Mg^{8+}	Excitation	0-10^8 K	Th

1342. K. M. Aggarwal, K. Hamada, A. Igarashi, V. Jonauskas, F. P. Keenan, S. Nakazaki
Radiative rates and electron impact excitation rates for H-like Fe XXVI.
Astron. Astrophys. 484, 879 (2008)

e + Fe^{25+}	Excitation	0−1500 Ry	Th

1343. Y. Li, J. Wu, Y. Hou, J. Yuan
Influence of hot and dense plasmas on energy levels and oscillator strengths of ions: Beryllium-like ions for Z = 26-36.
J. Phys. B 41, 145002 (2008)

e + Be Z= 26-36	De-excitation	500−2000 eV	Th
e + Be Z= 26-36	Line Broadening	500−2000 eV	Th
e + Be Z= 26-36	Excitation	500−2000 eV	Th

1344. A. S. Kheifets, A. Naja, E. M. Staicu Casagrande, A. Lahmam-Bennani
DWBA-G calculations of electron impact ionization of noble gas atoms.
J. Phys. B 41, 145201 (2008)

e + He	Ionization	37−205 eV	Th
e + Ne	Ionization	37−205 eV	Th
e + Ar	Ionization	37−205 eV	Th

1345. M. A. Ali, Y.-K. Kim
Ionization cross sections by electron impact on halogen atoms, diatomic halogen and hydrogen halide molecules.
J. Phys. B 41, 145202 (2008)

e + Br	Ionization	10−10,000 eV	Th
e + I	Ionization	10−10,000 eV	Th
e + Br_2	Ionization	10−10,000 eV	Th
e + HBr	Ionization	10−10,000 eV	Th
e + I_2	Ionization	10−10,000 eV	Th
e + HCl	Ionization	10−10,000 eV	Th
e + HI	Ionization	10−10,000 eV	Th

1346. D. V. Fursa, I. Bray
Calculation of electron-impact 4^1P excitation of calcium.
J. Phys. B 41, 145206 (2008)

e + Ca	Excitation	10−55 eV	Th

1347. G. Halmova, J. D. Gorfinkiel, J. Tennyson
Low and intermediate energy electron collisions with the $C_2{}^-$ molecular anion.
J. Phys. B 41, 155201 (2008)

e + $C_2{}^-$	Detachment	0−15 eV	Th
e + $C_2{}^-$	Excitation	0−15 eV	Th

1348. S. Dhar
The energy spectrum of scattered particles in the K-shell ionization of medium heavy atoms by relativistic electrons and positrons with exchange effects.
J. Phys. B 41, 155204 (2008)

e + Cu	Ionization	500−1000 keV	Th
e + Ag	Ionization	500−1000 keV	Th

1349. A. A. Borovik
The core excitation of Li_2 by low energy electron impact.
J. Phys. B 41, 165205 (2008)

e + Li_2	Excitation	56.38−80 eV	Exp

1350. L. M. Brescansin, L. E. Machado, M.-T. Lee, H. Cho, Y. S. Park
Absorption effects in intermediate-energy electron scattering by hydrogen sulphide.
J. Phys. B 41, 185201 (2008)

e + H_2S	Elastic Scattering	1−500 eV	E/T
e + H_2S	Angular Scattering	1−500 eV	E/T

1351. I. P. Sanches, R. T. Sugohara, L. Rosani, M.-T. Lee, I. Iga
Cross sections for elastic electron collisions on two hydrocarbon compounds: n-butane and benzene in the intermediate-energy range.
J. Phys. B 41, 185202 (2008)

e + C_4H_{10}	Elastic Scattering	50−1000 eV	Exp
e + C_6H_6	Elastic Scattering	50−1000 eV	Exp
e + C_4H_{10}	Angular Scattering	50−1000 eV	Exp
e + C_6H_6	Angular Scattering	50−1000 eV	Exp

1352. M. Tarana, J. Tennyson
Polarization effects in electron collisions with Li_2: Application of the molecular R-matrix method with pseudostates.
J. Phys. B 41, 205204 (2008)

e + Li_2	Excitation	5 eV	Th

1353. C. Dal Cappello, L. U. Ancarani
Comment on 'New geometry for the quasi-binary incident electron-centre of mass collision in the (e, 3e) process on He.'
J. Phys. B 41, 208001 (2008)

e + He	Ionization	5.6 keV	Th

1354. R. Choubisa, K. K. Sud
Reply to the comment on 'New geometry for the quasi-binary incident electron-centre of mass collision in the (e, 3e) process on He.'
J. Phys. B 41, 208002 (2008)

e + He	Ionization	5.6 keV	Th

1355. D. C. Griffin, C. P. Ballance, D. M. Mitnik, J. C. Berengut
Dirac R-matrix calculations of electron-impact excitation of neon-like krypton.
J. Phys. B 41, 215201 (2008)

e + Kr^{26+}	Excitation	100−220 Ry	Th

1356. I. Bray, D. V. Fursa, A. T. Stelbovics
Fully differential cross sections for electron-impact ionization of sodium.
J. Phys. B 41, 215203 (2008)

e + Na	Angular Scattering	6−100 eV	Th
e + Na	Ionization	6−100 eV	Th

1357. K. N. Joshipura, S. Gangopadhyay
Electron collisions with sulfur compounds SO, SO_2, and SO_2AB (A, B = Cl, F): Various total cross sections.
J. Phys. B 41, 215205 (2008)

e + SO_2	Elastic Scattering	10−2000 eV	Th
e + SO	Elastic Scattering	10−2000 eV	Th
e + SO_2Cl	Elastic Scattering	10−2000 eV	Th
e + SO_2F	Elastic Scattering	10−2000 eV	Th
e + SO_2	Excitation	10−2000 eV	Th
e + SO	Excitation	10−2000 eV	Th
e + SO_2Cl	Excitation	10−2000 eV	Th
e + SO_2F	Excitation	10−2000 eV	Th
e + SO_2	Ionization	10−2000 eV	Th
e + SO	Ionization	10−2000 eV	Th
e + SO_2Cl	Ionization	10−2000 eV	Th
e + SO_2F	Ionization	10−2000 eV	Th

1358. I. Yu. Kretinin, A. V. Krisilov, B. A. Zon
Born-Hartree-Bethe approximation in the theory of inelastic electron-molecule scattering.
J. Phys. B 41, 215206 (2008)

e + He	Excitation	0−4000 eV	Th
e + Ne	Excitation	0−4000 eV	Th
e + Ar	Excitation	0−4000 eV	Th
e + Kr	Excitation	0−4000 eV	Th
e + Xe	Excitation	0−4000 eV	Th
e + H_2	Excitation	0−4000 eV	Th
e + N_2	Excitation	0−4000 eV	Th
e + He	Ionization	0−4000 eV	Th
e + Ne	Ionization	0−4000 eV	Th
e + Ar	Ionization	0−4000 eV	Th
e + Kr	Ionization	0−4000 eV	Th
e + Xe	Ionization	0−4000 eV	Th
e + H_2	Ionization	0−4000 eV	Th
e + N_2	Ionization	0−4000 eV	Th

1359. M. Vinodkumar, K. Korot, C. Limbachiya, B. K. Antony
Screening-corrected electron impact total and ionization cross sections for boron trifluoride (BF_3) and boron trichloride (BCl_3).
J. Phys. B 41, 245202 (2008)

e + BF_3	Elastic Scattering	20−2000 eV	Th
e + BCl_3	Elastic Scattering	20−2000 eV	Th
e + BF_3	Ionization	20−2000 eV	Th
e + BCl_3	Ionization	20−2000 eV	Th

1360. J. Jiang, C.-Z. Dong, L.-Y. Xie, X.-X. Zhou, J.-G. Wang
Electron impact excitation of xenon from the metastable state to the excited states.
J. Phys. B 41, 245204 (2008)

e + Xe	Excitation	1−150 eV	Th
e + Xe^*	Excitation	1−150 eV	Th

1361. J. B. Roos, A. Larson, A. E. Orel
Dissociative recombination of HF^+.
Phys. Rev. A 78, 022508 (2008)

e + HF^+	Dissociation	0.04−10 eV	Th
e + HF^+	Recombination	0.04−10 eV	Th

1362. S. A. Napier, D. Cvejanovic, J. F. Williams, L. Pravica
Temporary negative-ion effects on photon emission from free zinc atoms excited by electron impact.
Phys. Rev. A 78, 022702 (2008)

e + Zn	Attachment	4−9.4 eV	Exp

1363. J. Jiang, C.-Z. Dong, L.-Y. Xie, J.-G. Wang
Resonance electron-impact excitation and polarization of the magnetic quadrupole line of neonlike Ba^{46+} ions.
Phys. Rev. A 78, 022709 (2008)

e + Ba^{46+}	Excitation	5−5.2 keV	Th

1364. Z. Felfli, A. Z. Msezane, D. Sokolovski
Strong resonances in low-energy electron elastic total and differential cross sections for Hf and Lu atoms.
Phys. Rev. A 78, 030703 (2008)

e + Lu	Elastic Scattering	0−0.1 eV	Th
e + Hf	Elastic Scattering	0−0.1 eV	Th
e + Lu	Angular Scattering	0−0.1 eV	Th
e + Hf	Angular Scattering	0−0.1 eV	Th

1365. L. H. Andersen
Thermionic electron emission from $SF_6{}^-$.
Phys. Rev. A 78, 032512 (2008)

e + SF	Attachment	0−2 eV	Th

1366. J. Fedor, O. May, M. Allan
Absolute cross sections for dissociative electron attachment to HCl, HBr, and their deuterated analogs.
Phys. Rev. A 78, 032701 (2008)

e + HBr	Attachment	0−12 eV	Exp
e + DBr	Attachment	0−12 eV	Exp
e + HCl	Attachment	0−12 eV	Exp
e + DCl	Attachment	0−12 eV	Exp
e + HBr	Dissociation	0−12 eV	Exp
e + DBr	Dissociation	0−12 eV	Exp
e + HCl	Dissociation	0−12 eV	Exp
e + DCl	Dissociation	0−12 eV	Exp

1367. S. Fritzsche, N. M. Kabachnik, A. Surzhykov
Angular distribution of the dielectronic satellite lines from relativistic high-Z ions: Multipole-mixing effects.
Phys. Rev. A 78, 032703 (2008)

e + U^{90+}	Recombination	125 MeV/u	E/T
e + U^{91+}	Recombination	125 MeV/u	E/T

1368. S. A. Napier, D. Cvejanovic, J. F. Williams, L. Pravica
Effect of electron correlations on the excitation of neutral states of zinc in the autoionizing region: A photon emission study.
Phys. Rev. A 78, 032706 (2008)

e + Zn	Fluorescence	10−18 eV	Exp
e + Zn	Excitation	10−18 eV	Exp

1369. S. Bellm, J. Lower, E. Weigold, I. Bray, D. V. Fursa, K. Bartschat, A. L. Harris, D. H. Madison
Absolute cross sections for the ionization-excitation of helium by electron impact.
Phys. Rev. A 78, 032710 (2008)

e + He	Angular Scattering	194.6−243 eV	E/T
e + He	Excitation	194.6−243 eV	E/T
e + He	Ionization	194.6−243 eV	E/T

1370. H. Cho, R. P. McEachran, S. J. Buckman, H. Tanaka
Elastic electron scattering from neon at backward angles.
Phys. Rev. A 78, 034702 (2008)

e + Ne	Elastic Scattering	5−100 eV	E/T
e + Ne	Angular Scattering	5−100 eV	E/T

1371. D. J. Haxton, T. N. Rescigno, C. W. McCurdy
Three-body breakup in dissociative electron attachment to the water molecule.
Phys. Rev. A 78, 040702 (2008)

e + H_2O	Attachment	6−18 eV	Th
e + H_2O	Dissociation	6−18 eV	Th

1372. M. S. Pindzola, F. Robicheaux, C. P. Ballance, J. P. Colgan
Electron-impact ionization of Li_2 and $Li_2{}^+$.
Phys. Rev. A 78, 042703 (2008)

e + Li_2	Ionization	0−50 eV	Th
e + $Li_2{}^+$	Ionization	0−50 eV	Th

1373. E. M. de Oliveira, M.A.P. Lima, M. T. do N. Varella
Comparative study of electron and positron scattering by H_2: The role of the $^2\Sigma_g{}^+$ Feshbach resonance.
Phys. Rev. A 78, 042704 (2008)

e + H_2	Excitation	7−14 eV	Th

1374. O. Zatsarinny, K. Bartschat, M. Maslov, M. J. Brunger, P.J.O. Teubner
Electron-impact excitation of the $(5d^{10}6s)^2S_{1/2}$ -¿ $(5d^9 6s^2)^2D_{5/2,3/2}$ transitions in gold atoms.
Phys. Rev. A 78, 042713 (2008)

e + Au	Excitation	2–6 eV	E/T

1375. N. C. Jones, D. Field, S. L. Lunt, J.-P. Ziesel
Scattering of cold electrons by ammonia, hydrogen sulfide, and carbonyl sulfide.
Phys. Rev. A 78, 042714 (2008)

e + NH_3	Elastic Scattering	0.020−10 eV	Exp
e + H_2S	Elastic Scattering	0.020−10 eV	Exp
e + COS	Elastic Scattering	0.020−10 eV	Exp
e + NH_3	Excitation	0.020−10 eV	Exp
e + H_2S	Excitation	0.020−10 eV	Exp
e + COS	Excitation	0.020−10 eV	Exp

1376. Y. Q. Liang, J. Y. Zhong
Electron impact collision strengths in Sn XXIII.
At. Data Nucl. Data Tables 94, 807 (2008)

e + Sn^{22+}	Excitation	37.5−8436 eV	Th

1377. K. Igenbergs, J. Schweinzer, I. Bray, D. Bridi, F. Aumayr
Database for inelastic collisions of sodium atoms with electrons, protons, and multiply charged ions.
At. Data Nucl. Data Tables 94, 981 (2008)

e + Na	Excitation	1-10^7 eV	E/T
e + Na	Ionization	1-10^7 eV	E/T

1378. N. R. Badnell
Dirac R-matrix with pseudo-states.
J. Phys. B 41, 175202 (2008)

e + H	Excitation	0.5−6500 Ry	Th
e + Sn	Excitation	0.5−6500 Ry	Th
e + H	Ionization	0.5−6500 Ry	Th
e + Sn	Ionization	0.5−6500 Ry	Th

1379. T. Singh, K. S. Kahlon, A. S. Dhaliwal
Thick target bremsstrahlung spectra produced by ^{204}Tl beta particles in the photon energy region of 10-30 keV.
J. Phys. B 41, 235001 (2008)

e + Al	Bremsstrahlung	765 keV	E/T
e + Ti	Bremsstrahlung	765 keV	E/T
e + Sn	Bremsstrahlung	765 keV	E/T
e + Pb	Bremsstrahlung	765 keV	E/T

1380. M. S. Pindzola, F. Robicheaux, J. Colgan
Energy and angle differential cross sections for the electron-impact double ionization of helium.
J. Phys. B 41, 235002 (2008)

e + He	Ionization	106 eV	E/T

1381. G. Y. Liang, A. D. Whiteford, N. R. Badnell
R-matrix inner-shell electron-impact excitation of Fe^{15+} including Auger-plus-radiation damping.
J. Phys. B 41, 235203 (2008)

e + Fe^{15+}	Excitation	10^4-10^8 K	Th

1382. S. Chatterjee, D. Misra, A. H. Kelkar, L. C. Tribedi, C. R. Stia, O. A. Fojon, R. D. Rivarola
Young-type interference effect on angular distribution of secondary electrons emitted from H_2 in collisions with fast electrons.
Phys. Rev. A 78, 052701 (2008)

e + H$_2$	Ionization	8 keV	Th

1383. X. Han, Y. Li, H. Zhang, J. Yan, J.-M. Li, L. Voky
R-matrix treatment of high-energy electron-impact excitation processes: The generalized oscillator strengths for the Na 3s-3p and 2p-3s transitions.
Phys. Rev. A 78, 052702 (2008)

e + Na	Excitation	10−1000 eV	E/T
e + Na*	Excitation	10−1000 eV	E/T

1384. J. A. Ludlow, S. D. Loch, M. S. Pindzola, C. P. Ballance, D. C. Griffin, M. E. Bannister, M. R. Fogle
Electron-impact ionization of C^+ in both ground and metastable states.
Phys. Rev. A 78, 052708 (2008)

e + C^+	Ionization	15−150 eV	E/T

1385. M. A. Khakoo, H. Silva, J. Muse, M.C.A. Lopes, C. Winstead, V. McKoy
Electron scattering from H_2O: Elastic scattering.
Phys. Rev. A 78, 052710 (2008)

e + H_2O	Elastic Scattering	1−100 eV	E/T
e + H_2O	Angular Scattering	1−100 eV	E/T

1386. K. M. Aggarwal, F. P. Keenan
Effective collision strengths for transitions in Ni XIX.
Astron. Astrophys. 488, 365 (2008)

e + Ni^{18+}	Excitation	0−250 Ry	Th

1387. I. Orban, S. Boehm, S. D. Loch, R. Schuch
Recombination rate coefficients of Be-like neon.
Astron. Astrophys. 489, 829 (2008)

e + Ne^{6+}	Recombination	10^3-3 × 10^5 K	E/T

1388. K. Butler, N. R. Badnell
Atomic data from the IRON project: LXVI. Electron impact excitation of Fe^{18+}.
Astron. Astrophys. 489, 1369 (2008)

e + Fe^{18+}	Excitation	10^5-10^8 K	E/T

1389. K. M. Aggarwal, F. P. Keenan
Energy levels, radiative rates, and electron impact excitation rates for transitions in O VII.
Astron. Astrophys. 489, 1377 (2008)

e + O^{6+}	Excitation	0-2 × 10^6 K	E/T

1390. A. Faure, E. Josselin
Collisional excitation of water in warm astrophysical media. I. Rate coefficients for rovibrationally excited states.
Astron. Astrophys. 492, 257 (2008)

e + H_2O	Excitation	200−5000 K	Th

1391. E. W. Schmidt, S. Schippers, D. Bernhardt, A. Mueller, J. Hoffmann, M. Lestinsky, D. A. Orlov, A. Wolf, D. V. Lukic, D. W. Savin, N. R. Badnell
Electron-ion recombination for Fe VIII forming Fe VII and Fe IX forming Fe VIII: Measurements and theory.
Astron. Astrophys. 492, 265 (2008)

e + Fe^{7+}	Recombination	0.2−1000 eV	E/T
e + Fe^{8+}	Recombination	0.2−1000 eV	E/T

1392. C. E. Hudson
Breit-Pauli R-matrix calculation for fine structure effective collision strengths from electron impact excitation of Mg IX.
Astron. Astrophys. 493, 697 (2008)

e + Mg^{8+}	Excitation	10^3-10^7 K	Th

1393. C. E. Hudson, C. A. Ramsbottom, P. H. Norrington, M. P. Scott
Breit-Pauli R-matrix calculation of fine-structure effective collision strengths for the electron impact excitation of Mg V.
Astron. Astrophys. 494, 729 (2009)

e + Mg^{4+}	Excitation	10^3-10^7 K	Th

1394. I. Orban, Z. Altun, A. Kaellberg, A. Simonsson, G. Andler, A. Paal, M. Blom, P. Loefgren, S. Trotsenko, S. Boehm, R. Schuch
Experimental dielectronic recombination rate coefficients for Na-like S VI and Na-like Ar VIII.
Astron. Astrophys. 498, 909 (2009)

e + S^{5+}	Recombination	0−20 eV	E/T
e + Ar^{7+}	Recombination	0−20 eV	E/T

1395. G. Y. Liang, A. D. Whiteford, N. R. Badnell
R-matrix electron-impact excitation data for B-like Si and its application in cool stars.
Astron. Astrophys. 499, 943 (2009)

e + Si^{9+}	Excitation	10^4-10^7 K	Th

1396. J. M. Munoz Burgos, S. D. Loch, C. P. Ballance, R. F. Bolvin
Electron-impact excitation of Ar^{2+}.
Astron. Astrophys. 500, 1253 (2009)

e + Ar^{2+}	Excitation	10^3-10^5 K	Th

1397. G. Y. Liang, A. D. Whiteford, N. R. Badnell
R-matrix electron-impact excitation data for the Na-like iso-electronic sequence.
Astron. Astrophys. 500, 1263 (2009)

e + Mg^{+}	Excitation	10^2-10^9 K	Th
e + Al^{2+}	Excitation	10^2-10^9 K	Th
e + Si^{3+}	Excitation	10^2-10^9 K	Th
e + P^{4+}	Excitation	10^2-10^9 K	Th
e + S^{5+}	Excitation	10^2-10^9 K	Th
e + Cl^{6+}	Excitation	10^2-10^9 K	Th
e + Ar^{7+}	Excitation	10^2-10^9 K	Th
e + K^{8+}	Excitation	10^2-10^9 K	Th
e + Ca^{9+}	Excitation	10^2-10^9 K	Th
e + Sc^{10+}	Excitation	10^2-10^9 K	Th
e + Ti^{11+}	Excitation	10^2-10^9 K	Th
e + V^{12+}	Excitation	10^2-10^9 K	Th
e + Cr^{13+}	Excitation	10^2-10^9 K	Th
e + Mn^{14+}	Excitation	10^2-10^9 K	Th
e + Fe^{15+}	Excitation	10^2-10^9 K	Th
e + Co^{16+}	Excitation	10^2-10^9 K	Th
e + Ni^{17+}	Excitation	10^2-10^9 K	Th

e + Cu^{18+}	Excitation	10^2-10^9 K	Th
e + Zn^{19+}	Excitation	10^2-10^9 K	Th
e + Ga^{20+}	Excitation	10^2-10^9 K	Th
e + Ge^{21+}	Excitation	10^2-10^9 K	Th
e + As^{22+}	Excitation	10^2-10^9 K	Th
e + Se^{23+}	Excitation	10^2-10^9 K	Th
e + Br^{24+}	Excitation	10^2-10^9 K	Th
e + Kr^{25+}	Excitation	10^2-10^9 K	Th

1398. I. Orban, S. Boehm, R. Schuch
Dielectronic recombination of Na-like S and Na-like Ar in the presence of external fields.
Astrophys. J. 694, 354 (2009)

e + S^{5+}	Recombination	10^4-10^7 K	Exp
e + Ar^{7+}	Recombination	10^4-10^7 K	Exp

1399. M. Lestinsky, N. R. Badnell, D. Bernhardt, M. Grieser, J. Hoffmann, D. Lukic, A. Mueller, D. A. Orlov, R. Repnow, D. W. Savin, E. W. Schmidt, M. Schnell, S. Schippers, A. Wolf, D. Yu
Electron-ion recombination of Fe X forming Fe IX and of Fe XI forming Fe X: Laboratory measurements and theoretical calculations.
Astrophys. J. 698, 648 (2009)

e + Fe^{9+}	Recombination	0−75 eV	E/T
e + Fe^{10+}	Recombination	0−75 eV	E/T

1400. A. Yu. Elizarov, I. I. Tupitsyn
Calculation by plane wave Born approximations of electron-impact ionization of silver and copper.
Eur. Phys. J. D 48, 67 (2008)

e + Cu	Ionization		Th
e + Ag	Ionization		Th

1401. I. Toth, R. I. Campeanu, V. Chis, L. Nagy
Electron impact ionization of diatomic molecules.
Eur. Phys. J. D 48, 351 (2008)

e + CO	Ionization		Th
e + N_2	Ionization		Th
e + O_2	Ionization		Th

1402. M. R. Talukder
Electron impact ionization of helium isoelectronic systems.
Eur. Phys. J. D 49, 167 (2008)

e + He	Ionization		Th
e + Li^{+}	Ionization		Th
e + B^{3+}	Ionization		Th
e + C^{4+}	Ionization		Th
e + N^{5+}	Ionization		Th
e + O^{6+}	Ionization		Th
e + Ne^{8+}	Ionization		Th
e + Na^{9+}	Ionization		Th
e + Ar^{16+}	Ionization		Th
e + Fe^{24+}	Ionization		Th
e + Mo^{41+}	Ionization		Th
e + Ag^{45+}	Ionization		Th
e + U^{90+}	Ionization		Th

1403. P. Mandelbaum, J. L. Schwob
Excitation-autoionization cross sections and rate coefficients for Ga-like ions.
Eur. Phys. J. D 49, 173 (2008)

e + K^{5+}	Excitation	0.1−10 E_i	Th
e + Mo^{11+}	Excitation	0.1−10 E_i	Th
e + Xe^{23+}	Excitation	0.1−10 E_i	Th
e + Pr^{28+}	Excitation	0.1−10 E_i	Th
e + Dy^{35+}	Excitation	0.1−10 E_i	Th
e + K^{5+}	Ionization	0.1−10 E_i	Th
e + Mo^{11+}	Ionization	0.1−10 E_i	Th
e + Xe^{23+}	Ionization	0.1−10 E_i	Th
e + Pr^{28+}	Ionization	0.1−10 E_i	Th
e + Dy^{35+}	Ionization	0.1−10 E_i	Th

1404. J. Lecointre, D. S. Belic, J. J. Jureta, R. Janev, P. Defrance
Absolute cross sections and kinetic energy release distributions for electron-impact ionization and dissociation of $CD_4{}^+$.
Eur. Phys. J. D 50, 265 (2008)

e + CH_4	Dissociation	0−2.5 keV	Exp
e + CD_4	Dissociation	0−2.5 keV	Exp
e + CH_4	Ionization	0−2.5 keV	Exp
e + CD_4	Ionization	0−2.5 keV	Exp

1405. B. A. Tom, V. Zhaunerchyk, M. B. Wiczer, A. A. Mills, K. N. Crabtree, M. Kaminska, W. D. Geppert, M. Hamberg, M. af Ugglas, E. Vigren, W. J. van der Zande, M. Larsson, R. D. Thomas, B. J. McCall
Dissociative recombination of highly enriched $para - H_3{}^+$.
J. Chem. Phys. 130, 031101 (2009)

e + $H_3{}^+$	Dissociation	60−1000 K	Exp
e + $H_3{}^+$	Recombination	60−1000 K	Exp

1406. C. Szmytkowski, A. Domaracka, P. Mozejko, E. Ptasinska-Denga
Electron scattering by trimethylene oxide, $c-(CH_2)_3O$, molecules.
J. Chem. Phys. 130, 134316 (2009)

e + $(CH_2)_3O$	Recombination	1.0−400.0 eV	E/T
e + C_3H_6O	Recombination	1.0−400.0 eV	E/T
e + $(CH_2)_3O$	Excitation	1.0−400.0 eV	E/T
e + C_3H_6O	Excitation	1.0−400.0 eV	E/T

1407. A. Dora, J. Tennyson, L. Bryjko, T. van Mourik
R-matrix calculation of low-energy electron collisions with uracil.
J. Chem. Phys. 130, 164307 (2009)

e + $C_4H_4N_2O_2$	Dissociation	0.0−5.0 eV	Th
e + $C_4H_4N_2O_2$	Excitation	0.0−5.0 eV	Th

1408. V. Zhaunerchyk, W. D. Geppert, S. Rosen, E. Vigren, M. Hamberg, M. Kaminska, I. Kashperka, M. af Ugglas, J. Semaniak, M. Larsson, R. D. Thomas
Investigation into the vibrational yield of OH products in the OH + H + H channel arising from the dissociative recombination of H_3O^+.
J. Chem. Phys. 130, 214302 (2009)

e + H_3O^+	Dissociation	300 K	Exp
e + H_3O^+	Recombination	300 K	Exp

1409. M.-Y. Song, T. Kato, D. Kato, I. Murakami, Y. Ralchenko
Total and partial dielectronic and radiative recombination of Xe^{10+} ions.
J. Phys. Soc. Japan 77, 064302 (2008)

e + Xe^{10+}	Recombination	1−1000 eV	Th

1410. D. Misra, K. V. Thulasiram, W. Fernandes, A. H. Kelkar, U. Kadhane, A. Kumar, Y. Singh, L. Gulyas, L. C. Tribedi
Double differential distributions of electron emission in ion-atom and electron-atom collisions using an electron spectrometer.
Nucl. Instrum. Methods Phys. Res. B 267, 157 (2009)

e + N$_2$	Elastic Scattering	2 keV; 3.7 MeV/amu	Exp
e + N$_2$	Angular Scattering	2 keV; 3.7 MeV/amu	Exp
e + N$_2$	Ionization	2 keV; 3.7 MeV/amu	Exp

1411. B. Paripas, B. Palasthy
Post-collision interaction after electron impact measured by (e,2e) coincidence technique.
Nucl. Instrum. Methods Phys. Res. B 267, 275 (2009)

e + Ar	Ionization	350 eV	Exp

1412. M. S. Rabasovic, S. D. Tosic, D. Sevic, V. Pejcev, D. M. Filipovic, B. P. Marinkovic
Electron impact excitation of the 6s $^2S_{1/2}$ state of In atom at small scattering angles.
Nucl. Instrum. Methods Phys. Res. B 267, 279 (2009)

e + In	Angular Scattering	10−100 eV	Exp
e + In	Excitation	10−100 eV	Exp

1413. S. D. Tosic, V. I. Kelemen, D. Sevic, V. Pejcev, D. M. Filipovic, E. Yu. Remeta, B. P. Marinkovic
Elastic electron scattering by silver atom.
Nucl. Instrum. Methods Phys. Res. B 267, 283 (2009)

e + Ag	Elastic Scattering	10−100 eV	E/T
e + Ag	Angular Scattering	10−100 eV	E/T

1414. R. D. DuBois, J. Gavin, O. G. de Lucio
Information about TS-1 and TS-2 double ionization mechanisms for positron and electron impact ionization of argon.
Nucl. Instrum. Methods Phys. Res. B 267, 358 (2009)

e + Ar	Angular Scattering	500 eV	Exp
e + Ar	Ionization	500 eV	Exp

1415. I. Toth, R. I. Campeanu, V. Chis, L. Nagy
Distorted-wave Born approximation for the ionization of molecules by positron and electron impact.
Nucl. Instrum. Methods Phys. Res. B 267, 362 (2009)

e + CH$_4$	Ionization	0-10^3 eV	Th
e + CO	Ionization	0-10^3 eV	Th
e + N$_2$	Ionization	0-10^3 eV	Th
e + O$_2$	Ionization	0-10^3 eV	Th

1416. S. Williams, C. A. Quarles
Absolute bremsstrahlung yields at 135 deg **from 53-keV electrons on gold film targets.**
Phys. Rev. A 78, 062704 (2008)

e + Au	Bremsstrahlung	53 keV	Exp

1417. S. Bellm, J. Lower, R. P. McEachran, E. Weigold, C. Ryan-Anderson, D. H. Madison
Spin- and fine-structure-resolved ionization of krypton.
Phys. Rev. A 78, 062707 (2008)

e + Kr	Angular Scattering	114.3−127.5 eV	E/T
e + Kr	Ionization	114.3−127.5 eV	E/T

1418. L. U. Ancarani, C. Dal Cappello, I. Charpentier, K. V. Rodriguez, G. Gasaneo
(e,3e) processes on two-electron atoms: Cusp conditions and scaling law.
Phys. Rev. A 78, 062709 (2008)

e + H^-	Angular Scattering	5500 eV	Th
e + He	Angular Scattering	5500 eV	Th
e + Li^+	Angular Scattering	5500 eV	Th
e + Be^{2+}	Angular Scattering	5500 eV	Th
e + B^{3+}	Angular Scattering	5500 eV	Th
e + C^{4+}	Angular Scattering	5500 eV	Th
e + N^{5+}	Angular Scattering	5500 eV	Th
e + O^{6+}	Angular Scattering	5500 eV	Th
e + F^{7+}	Angular Scattering	5500 eV	Th
e + H^-	Ionization	5500 eV	Th
e + He	Ionization	5500 eV	Th
e + Li^+	Ionization	5500 eV	Th
e + Be^{2+}	Ionization	5500 eV	Th
e + B^{3+}	Ionization	5500 eV	Th
e + C^{4+}	Ionization	5500 eV	Th
e + N^{5+}	Ionization	5500 eV	Th
e + O^{6+}	Ionization	5500 eV	Th
e + F^{7+}	Ionization	5500 eV	Th

1419. M. A. Khakoo, J. Muse, H. Silva, M.C.A. Lopes, C. Winstead, V. McKoy, E. M. de Oliveira, R. F. da Costa, M. T. do N. Varella, M.H.F. Bettega, M.A.P. Lima
Elastic scattering of slow electrons by n-propanol and n-butanol.
Phys. Rev. A 78, 062714 (2008)

e + C_3H_7OH	Elastic Scattering	1−100 eV	E/T
e + C_4H_9OH	Elastic Scattering	1−100 eV	E/T
e + C_3H_7OH	Angular Scattering	1−100 eV	E/T
e + C_4H_9OH	Angular Scattering	1−100 eV	E/T

1420. G. Csanak, D. P. Kilcrease, D. V. Fursa, I. Bray
Creation, destruction, and transfer of atomic multipole moments by electron scattering: Quantum-mechanical treatment.
Phys. Rev. A 78, 062716 (2008)

e + H	Excitation	5−200 eV	Th
e + Ba	Excitation	5−200 eV	Th

1421. C. Bousis, D. Emfietzoglou, H. Nikjoo, P. Hadjidoukas, A. Pathak
The effects of energy-loss straggling and elastic scattering models on Monte Carlo calculations of dose distribution functions for 10 keV to 1 MeV incident electrons in water.
Nucl. Instrum. Methods Phys. Res. B 267, 1725 (2009)

e + H_2O	Elastic Scattering	10^{-2}-1 MeV	E/T
e + H_2O	Angular Scattering	10^{-2}-1 MeV	E/T

1422. R. Dey, A. C. Roy
Fully differential cross section for single ionization of helium by 1 KeV electrons in the eikonal approximation.
Nucl. Instrum. Methods Phys. Res. B 267, 2357 (2009)

e + He	Angular Scattering	1 keV	Th
e + He	Ionization	1 keV	Th

1423. S. Novotny, H. Rubinstein, H. Buhr, O. Novotny, J. Hoffmann, M. B. Mendes, D. A. Orlov, C. Krantz, M. H. Berg, M. Froese, A. S. Jaroshevich, B. Jordon-Thaden, M. Lange, M. Lestinsky, A. Petrignani, D. Shafir, D. Zajfman, D. Schwalm, A. Wolf
Anisotropy and molecular rotation in resonant low-energy dissociative recombination.
Phys. Rev. Lett. 100, 193201 (2008)

e + H_2^+	Dissociation	7−35 MeV	Exp
e + HD^+	Dissociation	7−35 MeV	Exp
e + H_2^+	Recombination	7−35 MeV	Exp
e + HD^+	Recombination	7−35 MeV	Exp

1424. H. Silva, J. Muse, M.C.A. Lopes, M. A. Khakoo
Low energy elastic differential electron scattering from H_2O.
Phys. Rev. Lett. 101, 033201 (2008)

e + H_2O	Elastic Scattering	1−100 eV	Exp
e + H_2O	Angular Scattering	1−100 eV	Exp

1425. J.L.S. Lino
Elastic electron scattering by CH_4 in the low-energy range.
Phys. Scr. 79, 025303 (2009)

e + CH_4	Elastic Scattering	9−30 eV	Th
e + CH_4	Angular Scattering	9−30 eV	Th

1426. C. E. Hudson
Fine structure effective collision strengths for the electron impact excitation of Ca VI.
Phys. Scr. 79, 035301 (2009)

e + Ca^{5+}	Excitation	0−65 eV	Th

1427. R. Zhang, A. Faure, J. Tennyson
Electron and positron collisions with polar molecules: Studies with the benchmark water molecule.
Phys. Scr. 80, 015301 (2009)

e + H_2O	Elastic Scattering	10^{-2}-10 eV	Th
e + H_2O	Angular Scattering	10^{-2}-10 eV	Th

1428. A. L. Harris, M. Foster, C. Ryan-Anderson, J. L. Peacher, D. H. Madison
Projectile interactions in theoretical triple differential cross sections for simultaneous excitation-ionization of helium.
J. Phys. B 41, 135203 (2008)

e + He	Angular Scattering	500 eV	Th
e + He	Excitation	500 eV	Th
e + He	Ionization	500 eV	Th

1429. M. Vos, M. R. Went, G. Cooper, C. A. Chatzidimitriou-Dreismann
Elastic electron scattering from methane at high momentum transfer.
J. Phys. B 41, 135204 (2008)

e + H	Elastic Scattering	1−6 keV	E/T
e + C	Elastic Scattering	1−6 keV	E/T
e + Xe	Elastic Scattering	1−6 keV	E/T
e + CH_4	Elastic Scattering	1−6 keV	E/T

1430. J. Glosik, I. Korolov, R. Plasil, O. Novotny, T. Kotrik, P. Hlavenka, J. Varju, I. A. Mikhailov, V. Kokoouline, C. H. Greene
Recombination of $H_3{}^+$ ions in the afterglow of a $He - Ar - H_2$ plasma.
J. Phys. B 41, 191001 (2008)

e + $H_3{}^+$	Recombination	260 K	E/T

1431. T. H. Hoffmann, H. Hotop, M. Allan
Resonance structure in low-energy electron scattering from OCS.
J. Phys. B 41, 195202 (2008)

e + OCS	Elastic Scattering	0.06−20 eV	Exp
e + OCS	Angular Scattering	0.06−20 eV	Exp
e + OCS	Excitation	0.06−20 eV	Exp

1432. L. Ishikawa, T. Odagiri, K. Yachi, T. Nakazato, M. Kurokawa, M. Kitajima, N. Kouchi
Doubly excited states of ammonia produced by photon and electron interactions.
J. Phys. B 41, 195204 (2008)

e + NH_3	Dissociation	100 eV; 15−60 eV	E/T
e + NH_3	Excitation	100 eV; 15−60 eV	E/T

1433. C. P. Ballance, D. C. Griffin
Intermediate-coupling R-matrix calculations of electron-impact excitation of Fe^{5+}.
J. Phys. B 41, 195205 (2008)

e + Fe^{5+}	Excitation	0−82 eV; 10,000−6,000,000 K	Th

1434. J. Xu, A.-T. Le, T. Morishita, C. D. Lin
Signature of Ericson fluctuations in helium inelastic scattering cross sections near the double ionization threshold.
Phys. Rev. A 78, 012701 (2008)

e + He^+	Excitation	near threshold	Th
e + He^+	Ionization	near threshold	Th

1435. J. C. Berengut, S. D. Loch, M. S. Pindzola, C. P. Ballance, D. C. Griffin, M. Fogle, M. E. Bannister
Electron-impact ionization of B^+.
Phys. Rev. A 78, 012704 (2008)

e + B^+	Ionization	20−150 eV	E/T

1436. K. Franz, T. H. Hoffmann, J. Boemmels, A. Gopalan, G. Sauter, W. Meyer, M. Allan, M.-W. Ruf, H. Hotop
Low-lying resonances in electron-argon scattering: Measurements at 5-meV resolution and comparison with theory.
Phys. Rev. A 78, 012712 (2008)

e + Ar	Elastic Scattering	11−13.7 eV	E/T
e + Ar	Angular Scattering	11−13.7 eV	E/T
e + Ar	Excitation	11−13.7 eV	E/T

1437. S. S. Tayal, O. Zatsarinny
Excitation cross sections for electron scattering from K^+ ions.
Phys. Rev. A 78, 012713 (2008)

e + K^+	Excitation	0−400 eV	Th

1438. L. Sharma, R. Srivastava, A. D. Stauffer
Electron excitation of the 3s4s $^1S_0$ and 3s4p $^1P_1$ states of magnesium.
Phys. Rev. A 78, 014701 (2008)

e + Mg	Angular Scattering	40−100 eV	Th
e + Mg	Excitation	40−100 eV	Th

3.2.3 Heavy Particles Collisions

1439. M. P. Gaigeot, R. Vuilleumier, C. Stia, M. E. Galassi, R. Rivarola, B. Gervais, M. F. Politis
A multi-scale ab initio theoretical study of the production of free radicals in swift ion tracks in liquid water.
J. Phys. B 40, 1 (2007)

S^{16+} + H_2O	Ionization	70−77 MeV/u	Th
Ar^{18+} + H_2O	Ionization	70−77 MeV/u	Th

1440. M. A. Rosenberry, K. M. Burgess, B. Stewart
Noble gas pressure broadening of the ^7Li 2s-3s transition.
J. Phys. B 40, 177 (2007)

Li + Ne	Line Broadening	883 K	E/T
Li + Ar	Line Broadening	883 K	E/T
Li + Kr	Line Broadening	883 K	E/T
Li + Xe	Line Broadening	883 K	E/T
Li^* + Ne	Line Broadening	883 K	E/T
Li^* + Ar	Line Broadening	883 K	E/T
Li^* + Kr	Line Broadening	883 K	E/T
Li^* + Xe	Line Broadening	883 K	E/T
Li + Ne	Interaction Potentials	883 K	E/T
Li + Ar	Interaction Potentials	883 K	E/T
Li + Kr	Interaction Potentials	883 K	E/T
Li + Xe	Interaction Potentials	883 K	E/T
Li^* + Ne	Interaction Potentials	883 K	E/T
Li^* + Ar	Interaction Potentials	883 K	E/T
Li^* + Kr	Interaction Potentials	883 K	E/T
Li^* + Xe	Interaction Potentials	883 K	E/T

1441. F. Lique, A. Spielfiedel, N. Feautrier
Relaxation of diatomic molecules by isotropic collisions: Application to depolarizing collisions of CS by He atoms.
J. Phys. B 40, 787 (2007)

He + CS	Line Broadening	300−1500 K	Th
He + CS	De-excitation	300−1500 K	Th

1442. E. Dalimier, E. Oks, O. Renner, R. Schott
Experimental determination of rate coefficients of charge exchange from x-dips in laser-produced plasmas.
J. Phys. B 40, 909 (2007)

$\mathbf{C^{6+} + Al^{12+}}$	Charge Transfer	laser plasma	Exp

1443. C. D. Archubi, C. C. Montanari, J. E. Miraglia
Many-electron model for multiple ionization in atomic collisions.
J. Phys. B 40, 943 (2007)

$\mathbf{H^+ + Ne}$	Ionization	10^2-10^4 keV	Th
$\mathbf{H^+ + Ar}$	Ionization	10^2-10^4 keV	Th
$\mathbf{H^+ + Kr}$	Ionization	10^2-10^4 keV	Th
$\mathbf{H^+ + Xe}$	Ionization	10^2-10^4 keV	Th

1444. T. Spranger, M. Zapukhlyak, T. Kirchner
Angular differential cross sections for multiple ionization of rare gas atoms by protons with inclusion of Auger-like processes.
J. Phys. B 40, 1081 (2007)

$\mathbf{H^+ + Ne}$	Total Scattering	0.4−3 MeV	E/T
$\mathbf{H^+ + Ar}$	Total Scattering	0.4−3 MeV	E/T
$\mathbf{H^+ + Ne}$	Ionization	0.4−3 MeV	E/T
$\mathbf{H^+ + Ar}$	Ionization	0.4−3 MeV	E/T

1445. D.F.T. Mullamphy, G. Peach, V. Venturi, I. B. Whittingham, S. J. Gibson
Collisional broadening of alkali doublets by helium perturbers.
J. Phys. B 40, 1141 (2007)

He + Li	Line Broadening	70−3000 K	Th
He + Na	Line Broadening	70−3000 K	Th
He + K	Line Broadening	70−3000 K	Th
He + Li	Interaction Potentials	70−3000 K	Th
He + Na	Interaction Potentials	70−3000 K	Th
He + K	Interaction Potentials	70−3000 K	Th

1446. G. Ledru, F. Marchal, N. Merbahi, J. P. Gardou, N. Sewraj
Study of the formation and decay of KrXe* excimers at room temperature following selective excitation of the xenon 6s states.
J. Phys. B 40, 1651 (2007)

Kr + Xe	Association	292−299 nm	Exp
$\mathbf{Kr + Xe^*}$	Association	292−299 nm	Exp
$\mathbf{Kr^* + Xe}$	Association	292−299 nm	Exp
Kr + Xe	Interaction Potentials	292−299 nm	Exp
$\mathbf{Kr + Xe^*}$	Interaction Potentials	292−299 nm	Exp
$\mathbf{Kr^* + Xe}$	Interaction Potentials	292−299 nm	Exp

1447. M. S. Pindzola, F. Robicheaux, J. Colgan
Double ionization of helium by fast bare ion collisions.
J. Phys. B 40, 1695 (2007)

$\mathbf{He^{2+} + He}$	Ionization	1−1.6 MeV/amu	Th

1448. F. Afaneh, L.Ph.H. Schmidt, M. Schoeffler, K. E. Stiebing, J. Al-Jundi, H. Schmidt-Boecking, R. Doerner
Dynamics of electron-capture-to-continuum (ECC) formation in slow ion-atom collisions.
J. Phys. B 40, 1745 (2007)

$\mathbf{H^+ + He}$	Charge Transfer	25 keV	Exp
$\mathbf{H^+ + He}$	Total Scattering	25 keV	Exp

1449. S. Otranto, R. E. Olson, P. Beiersdofer
Cometary x-rays: Line emission cross sections for multiply charged solar wind ion charge exchange.
J. Phys. B 40, 1755 (2007)

$\mathbf{C^{5+} + H_2O}$	Charge Transfer	1 keV/amu	E/T
$\mathbf{C^{6+} + H_2O}$	Charge Transfer	1 keV/amu	E/T
$\mathbf{N^{6+} + H_2O}$	Charge Transfer	1 keV/amu	E/T
$\mathbf{N^{7+} + H_2O}$	Charge Transfer	1 keV/amu	E/T
$\mathbf{O^{7+} + H_2O}$	Charge Transfer	1 keV/amu	E/T
$\mathbf{O^{8+} + H_2O}$	Charge Transfer	1 keV/amu	E/T
$\mathbf{Ne^{9+} + H_2O}$	Charge Transfer	1 keV/amu	E/T
$\mathbf{Ne^{10+} + H_2O}$	Charge Transfer	1 keV/amu	E/T

1450. S. Chattopadhyay, D. Mukhopadhyay
Applications of linear response theories to compute the low-lying potential energy surfaces: State-specific MRCEPA-based approach.
J. Phys. B 40, 1787 (2007)

$\mathbf{Be + H_2}$	Interaction Potentials	0−6 a.u.	Th

1451. M. Abu-Kharma
Analysis of the collision-induced absorption spectra of H_2 in $H_2 - N - 2$ in the range 5600-9500 cm^{-1}.
J. Phys. B 40, 2345 (2007)

$\mathbf{H_2 + N_2}$	Line Broadening	5,600−9,500 cm^{-1}	Th

1452. A. H. Kelkar, U. Kadhane, D. Misra, A. Kumar, L. C. Tribedi
Effect of multiple plasmon excitation on single, double and multiple ionizations of C_{60} in collisions with fast highly charged Si ions.
J. Phys. B 40, 2481 (2007)

$\mathbf{Si^{6+} + C_{60}}$	Ionization	2.33 MeV/u	Exp
$\mathbf{Si^{7+} + C_{60}}$	Ionization	2.33 MeV/u	Exp
$\mathbf{Si^{8+} + C_{60}}$	Ionization	2.33 MeV/u	Exp
$\mathbf{Si^{9+} + C_{60}}$	Ionization	2.33 MeV/u	Exp
$\mathbf{Si^{10+} + C_{60}}$	Ionization	2.33 MeV/u	Exp
$\mathbf{Si^{11+} + C_{60}}$	Ionization	2.33 MeV/u	Exp
$\mathbf{Si^{12+} + C_{60}}$	Ionization	2.33 MeV/u	Exp
$\mathbf{Si^{13+} + C_{60}}$	Ionization	2.33 MeV/u	Exp
$\mathbf{Si^{14+} + C_{60}}$	Ionization	2.33 MeV/u	Exp

1453. M. Roudjane, R. McCarroll, D. Rabli
Validity of the Langevin capture model for charge exchange processes at thermal energies.
J. Phys. B 40, 2491 (2007)

$\mathbf{N^{3+} + H}$	Charge Transfer	0−14 eV	Th

1454. M. F. Ciappina, W. R. Cravero, M. Schulz
Post-collisional effects on single ionization in 75 keV p + He collisions.
J. Phys. B 40, 2577 (2007)

$\mathbf{H^+ + He}$	Total Scattering	75 keV	Th
$\mathbf{H^+ + He}$	Ionization	75 keV	Th

1455. D. H. Jakubassa-Amundsen
The polarization of bremsstrahlung from radiative ionization induced by relativistic highly charged projectiles.
J. Phys. B 40, 2719 (2007)

$\mathbf{C^{6+} + H}$	Total Scattering	400−643 MeV/u	Th
$\mathbf{Ag^{47+} + H}$	Total Scattering	400−643 MeV/u	Th
$\mathbf{Ag^{47+} + C}$	Total Scattering	400−643 MeV/u	Th
$\mathbf{Ag^{47+} + Ar}$	Total Scattering	400−643 MeV/u	Th
$\mathbf{Xe^{54+} + C}$	Total Scattering	400−643 MeV/u	Th
$\mathbf{Xe^{54+} + Ar}$	Total Scattering	400−643 MeV/u	Th
$\mathbf{U^{92+} + H}$	Total Scattering	400−643 MeV/u	Th
$\mathbf{U^{92+} + C}$	Total Scattering	400−643 MeV/u	Th
$\mathbf{C^{6+} + H}$	Ionization	400−643 MeV/u	Th
$\mathbf{Ag^{47+} + H}$	Ionization	400−643 MeV/u	Th
$\mathbf{Ag^{47+} + C}$	Ionization	400−643 MeV/u	Th
$\mathbf{Ag^{47+} + Ar}$	Ionization	400−643 MeV/u	Th
$\mathbf{Xe^{54+} + C}$	Ionization	400−643 MeV/u	Th
$\mathbf{Xe^{54+} + Ar}$	Ionization	400−643 MeV/u	Th
$\mathbf{U^{92+} + H}$	Ionization	400−643 MeV/u	Th
$\mathbf{U^{92+} + C}$	Ionization	400−643 MeV/u	Th

1456. F. Shindo, J. F. Babb, K. Kirby, K. Yoshino
Absorption spectrum in the wings of the potassium second resonance doublet broadened by helium.
J. Phys. B 40, 2841 (2007)

K + He	Line Broadening	900 K	Exp

1457. M. Schulz, D. Fischer, T. Ferger, R. Moshammer, J. Ullrich
Four-particle Dalitz plots to visualize atomic break-up processes.
J. Phys. B 40, 3091 (2007)

$\mathbf{H^- + He}$	Ionization	200 keV	Exp

1458. A. S. Dickinson
Quantum reflection model for ionization rate coefficients in cold metastable helium collisions.
J. Phys. B 40, F237 (2007)

He + He	Ionization	10^{-6}-10^{-3} K	Th
$\mathbf{He + He^*}$	Ionization	10^{-6}-10^{-3} K	Th
$\mathbf{He^* + He^*}$	Ionization	10^{-6}-10^{-3} K	Th

1459. S. A. Wrathmall, D. R. Flower
The rovibrational excitation of H_2 induced by H.
J. Phys. B 40, 3221 (2007)

$\mathbf{H + H_2}$	De-excitation	0-6 $\times 10^5$ K	Th
$\mathbf{H + H_2{}^*}$	De-excitation	0-6 $\times 10^5$ K	Th
$\mathbf{H + H_2}$	Excitation	0-6 $\times 10^5$ K	Th

1460. A. V. Turbiner, N. L. Guevara
The HeH^+ molecular ion in a magnetic field.
J. Phys. B 40, 3249 (2007)

$\mathbf{H^+ + He}$	Interaction Potentials		Th

1461. A. B. Voitkiv, B. Najjari
Three-body models for the electron loss from the K-shell of highly charged ions in relativistic collisions with atoms.
J. Phys. B 40, 3295 (2007)

$\mathbf{U^{90+} + H^+}$	Ionization	0.1−1.0 GeV/amu	Th
$\mathbf{U^{91+} + H^+}$	Ionization	0.1−1.0 GeV/amu	Th

1462. F. Afaneh, L.Ph.H. Schmidt, M. Schoeffler, K. E. Stiebing, J. Al-Jundi, H. Schmidt-Boecking, R. Doerner
Orientation and impact-parameter dependence of dissociative ionization of H_2 by slow ion impact.
J. Phys. B 40, 3467 (2007)

$\mathbf{H^+ + H_2}$	Dissociation	25 keV	Exp
$\mathbf{H^+ + H_2}$	Ionization	25 keV	Exp

1463. M. J. Jamieson, A. S.-C. Cheung, H. Ouerdane, G.-H. Jeung, N. Geum
S-wave scattering lengths and effective ranges for collisions of ground state Be atoms.
J. Phys. B 40, 3497 (2007)

Be + Be	Interaction Potentials	3.5−30 bohr	Th

1464. T. Minami, M. S. Pindzola, T.-G. Lee, D. R. Schultz
Numerical study of charge transfer in $H^+ + He^+$ and $He^{2+} + Li^{2+}$ collisions.
J. Phys. B 40, 3629 (2007)

$\mathbf{H^+ + He^+}$	Charge Transfer	0.5−4.0 a.u.	Th
$\mathbf{He^{2+} + Li^{2+}}$	Charge Transfer	0.5−4.0 a.u.	Th

1465. M. F. Ciappina
Fully differential cross sections for ion-atom impact ionization in the presence of a laser field.
J. Phys. B 40, 4155 (2007)

$\mathbf{C^{6+} + He}$	Total Scattering	100 MeV/u	Th
$\mathbf{C^{6+} + He}$	Ionization	100 MeV/u	Th

1466. M. Marafi, Z. Suji, K. Bhatia, Y. Makdisi, J. Mathew
Shifts and broadenings of barium Rydberg states perturbed by inert gases.
J. Phys. B 40, 4211 (2007)

Ba + Ba	Line Broadening	10−400 mb	Exp
$\mathbf{Ba + Ba^*}$	Line Broadening	10−400 mb	Exp
$\mathbf{Ba^* + Ba^*}$	Line Broadening	10−400 mb	Exp

1467. F. Jarai-Szabo, L. Nagy
Semiclassical description of kinematically complete experiments.
J. Phys. B 40, 4259 (2007)

C^{6+} + He	Total Scattering	100 MeV/u	Th
C^{6+} + He	Ionization	100 MeV/u	Th

1468. O. Alvarez-Bajo, R. D. Santiago, R. Lemus, J. M. Arias, J. Gomez-Camacho, M. Rodriguez-Gallardo
An algebraic model to describe atom-diatom inelastic collisions in the semiclassical approximation.
J. Phys. B 40, 4513 (2007)

H_2 + He	Interaction Potentials		Th
N_2 + N_2	Interaction Potentials		Th
Br_2 + H_2	Interaction Potentials		Th

1469. J. X. Shao, X. M. Chen, B. W. Ding
Double-to-single ionization ratios of helium colliding with low-to-intermediate velocity charged ions.
Phys. Rev. A 75, 012701 (2007)

C^{+} + He	Ionization	25−500 keV/u	Exp
C^{2+} + He	Ionization	25−500 keV/u	Exp
C^{3+} + He	Ionization	25−500 keV/u	Exp

1470. M. Lara, J. L. Bohn, D. E. Potter, P. Soldan, J. M. Hutson
Cold collisions between OH and Rb: The field-free case.
Phys. Rev. A 75, 012704 (2007)

Rb + OH	Elastic Scattering	10^{-6}-1 K	Th
Rb + OH	Interaction Potentials	10^{-6}-1 K	Th
Rb + OH	Excitation	10^{-6}-1 K	Th

1471. M. Chrysos, F. Rachet, N. I. Egorova, A. P. Kouzov
Intermolecular Raman spectroscopy of long-range interactions: The $CO_2 - Ar$ collision-induced ν_3 CO_2 band.
Phys. Rev. A 75, 012707 (2007)

Ar + CO_2	Excitation	300 K	E/T

1472. M. Tacconi, E. Bodo, F. A. Gianturco
Sympathetic cooling of $NH(X^3\Sigma^-)$ molecules by Rb and Cs atoms at ultralow energies.
Phys. Rev. A 75, 012708 (2007)

Rb + NH	Elastic Scattering	10^{-7}-0.5 cm^{-1}	Th
Cs + NH	Elastic Scattering	10^{-7}-0.5 cm^{-1}	Th
Rb + NH	Detachment	10^{-7}-0.5 cm^{-1}	Th
Cs + NH	Detachment	10^{-7}-0.5 cm^{-1}	Th
Rb + NH	Excitation	10^{-7}-0.5 cm^{-1}	Th
Cs + NH	Excitation	10^{-7}-0.5 cm^{-1}	Th

1473. D. J. Haxton, C. W. McCurdy, T. N. Rescigno
Dissociative electron attachment to the H_2O molecule. I. Complex-valued potential-energy surfaces for the $^2B_1$, $^2A_1$, and $^2B_2$ metastable states of the water anion.
Phys. Rev. A 75, 012710 (2007)

O^- + H_2	Interaction Potentials		Th

1474. M. Hoshino, L. Pichl, Y. Kanai, Y. Nakai, M. Kitajima, M. Kimura, Y. Li, H.-P. Liebermann, R. J. Buenker, H. Tanaka, Y. Yamazaki
Experimental and theoretical study of double-electron capture in collisions of slow $C^{4+}(1s^2\ ^1S)$ with $He(1s^2\ ^1S)$.
Phys. Rev. A 75, 012716 (2007)

C^{4+} + He	Charge Transfer	240−440 eV	E/T

1475. W. C. Chen, T. R. Gentile, T. G. Walker, E. Babcock
Spin-exchange optical pumping of ^3He with Rb-K mixtures and pure K.
Phys. Rev. A 75, 013416 (2007)

He + K	De-excitation	360−480 K	E/T
He + Rb	De-excitation	360−480 K	E/T

1476. H. Ogawa, H. Geissel, A. Fettouhi, S. Fritzsche, M. Portillo, C. Scheidenberger, V. P. Shevelko, A. Surzhykov, H. Weick, F. Becker, D. Boutin, B. Kindler, R. K. Knobel, J. Kurcewicz, W. Kurcewicz, Yu. A. Stadlmann, H. Tsuchida, M. Winkler, N. Yao
Gas-solid difference in charge-changing cross sections for bare and H-like nickel ions at 200 MeV/u.
Phys. Rev. A 75, 020703 (2007)

Ni + N	Charge Transfer	200 MeV/u	Exp
Ni^{28+} + C	Charge Transfer	200 MeV/u	Exp
Ni^{28+} + Ne	Charge Transfer	200 MeV/u	Exp
Ni^{28+} + Al	Charge Transfer	200 MeV/u	Exp
Ni^{28+} + Ti	Charge Transfer	200 MeV/u	Exp
Ni^{28+} + C_2H_4	Charge Transfer	200 MeV/u	Exp
Ni^{28+} + $(C_3H_6)n$	Charge Transfer	200 MeV/u	Exp
Ni^{27+} + C	Ionization	200 MeV/u	Exp
Ni^{27+} + N	Ionization	200 MeV/u	Exp
Ni^{27+} + Ne	Ionization	200 MeV/u	Exp
Ni^{27+} + Al	Ionization	200 MeV/u	Exp
Ni^{27+} + Ti	Ionization	200 MeV/u	Exp
Ni^{27+} + C_2H_4	Ionization	200 MeV/u	Exp
Ni^{27+} + $(C_3H_6)n$	Ionization	200 MeV/u	Exp

1477. S. Mada, K.-N. Hida, M. Kimura, L. Pichl, H.-P. Liebermann, Y. Li, R. J. Buenker
Charge transfer and electronic excitation in collisions of protons with water molecules below 10 keV.
Phys. Rev. A 75, 022706 (2007)

H^+ + H_2O	Charge Transfer	10 keV	Th
H^+ + H_2O	Excitation	10 keV	Th

1478. Y. Ning, L. Liu, B. He, C. L. Liu, J. Yan, J. G. Wang
Collisional ionization of C^{q+} by He^{2+} and its applications in the inertial controlled fusion diagnostics.
Phys. Rev. A 75, 022713 (2007)

He^{2+} + C	Ionization	0.03−10 MeV/u	Th
He^{2+} + C^+	Ionization	0.03−10 MeV/u	Th
He^{2+} + C^{2+}	Ionization	0.03−10 MeV/u	Th
He^{2+} + C^{3+}	Ionization	0.03−10 MeV/u	Th
He^{2+} + C^{4+}	Ionization	0.03−10 MeV/u	Th
He^{2+} + C^{5+}	Ionization	0.03−10 MeV/u	Th

1479. M. Schulz, T. Vajnai, J. A. Brand
Differential double capture cross sections in p + He collisions.
Phys. Rev. A 75, 022717 (2007)

$\mathbf{H^+ + He}$	Charge Transfer	15−150 keV	Exp
$\mathbf{H^+ + He}$	Total Scattering	15−150 keV	Exp

1480. O. Boudrioua, C. Champion, C. Dal Cappello, Y. V. Popov
Ab initio calculation of differential and total cross sections for the ionization of water vapor by protons.
Phys. Rev. A 75, 022720 (2007)

$\mathbf{H^+ + H_2O}$	Total Scattering	0.1−100 MeV	Th
$\mathbf{H^+ + H_2O}$	Ionization	0.1−100 MeV	Th

1481. T. Kirchner
Laser-field enhanced electron transfer in p-Ne and p-Ar collisions.
Phys. Rev. A 75, 025401 (2007)

$\mathbf{H^+ + Ne + h\nu}$	Charge Transfer	2−20 keV	Th
$\mathbf{H^+ + Ar + h\nu}$	Charge Transfer	2−20 keV	Th

1482. L. F. Errea, L. Fernandez, L. Mendez, B. Pons, I. Rabadan, A. Riera
Vibronic treatment of vibrational excitation and electron capture in $H^+ + H_2$ (HD, D_2,) collisions at low impact energies.
Phys. Rev. A 75, 032703 (2007)

$\mathbf{H^+ + H_2}$	Dissociation	10−10,000 eV	Th
$\mathbf{H^+ + HD}$	Dissociation	10−10,000 eV	Th
$\mathbf{H^+ + HT}$	Dissociation	10−10,000 eV	Th
$\mathbf{H^+ + D_2}$	Dissociation	10−10,000 eV	Th
$\mathbf{H^+ + DT}$	Dissociation	10−10,000 eV	Th
$\mathbf{H^+ + T_2}$	Dissociation	10−10,000 eV	Th
$\mathbf{H^+ + H_2}$	Charge Transfer	10−10,000 eV	Th
$\mathbf{H^+ + HD}$	Charge Transfer	10−10,000 eV	Th
$\mathbf{H^+ + HT}$	Charge Transfer	10−10,000 eV	Th
$\mathbf{H^+ + D_2}$	Charge Transfer	10−10,000 eV	Th
$\mathbf{H^+ + DT}$	Charge Transfer	10−10,000 eV	Th
$\mathbf{H^+ + T_2}$	Charge Transfer	10−10,000 eV	Th
$\mathbf{H^+ + H_2}$	Excitation	10−10,000 eV	Th
$\mathbf{H^+ + HD}$	Excitation	10−10,000 eV	Th
$\mathbf{H^+ + HT}$	Excitation	10−10,000 eV	Th
$\mathbf{H^+ + D_2}$	Excitation	10−10,000 eV	Th
$\mathbf{H^+ + DT}$	Excitation	10−10,000 eV	Th
$\mathbf{H^+ + T_2}$	Excitation	10−10,000 eV	Th

1483. R. J. Mawhorter, A. Chutjian, T. E. Cravens, N. Djuric, S. Hossain, C. M. Lisse, J. A. MacAskill, S. J. Smith, J. Simcic, I. D. Williams
Absolute single and multiple charge exchange cross sections for highly charged C, O, and Ne ions on H_2O, CO, and CO_2.
Phys. Rev. A 75, 032704 (2007)

$\mathbf{C^{3+} + CO}$	Charge Transfer		Exp
$\mathbf{C^{5+} + H_2O}$	Charge Transfer		Exp
$\mathbf{C^{5+} + CO}$	Charge Transfer		Exp
$\mathbf{C^{5+} + CO_2}$	Charge Transfer		Exp
$\mathbf{C^{6+} + CO}$	Charge Transfer		Exp

C^{6+} + CO_2	Charge Transfer		Exp
O^{5+} + CO	Charge Transfer		Exp
O^{5+} + CO_2	Charge Transfer		Exp
O^{6+} + H_2O	Charge Transfer		Exp
O^{6+} + CO	Charge Transfer		Exp
O^{6+} + CO_2	Charge Transfer		Exp
O^{7+} + CO	Charge Transfer		Exp
O^{7+} + CO_2	Charge Transfer		Exp
O^{8+} + H_2O	Charge Transfer		Exp
O^{8+} + CO	Charge Transfer		Exp
O^{8+} + CO_2	Charge Transfer		Exp
Ne^{7+} + H_2O	Charge Transfer		Exp
Ne^{7+} + CO	Charge Transfer		Exp
Ne^{7+} + CO_2	Charge Transfer		Exp

1484. Z. Li, R. V. Krems
Electric-field-induced Feshbach resonances in ultracold alkali-metal mixtures.
Phys. Rev. A 75, 032709 (2007)

Li + Cs	Elastic Scattering	10^{-7} cm^{-1}	Th

1485. M. Seliger, C. O. Reinhold, T. Minami, D. R. Schultz, M. S. Pindzola, S. Yoshida, J. Burgdorfer, E. Lamour, J.-P. Rozet, D. Vernhet
Electron capture and electron transport by fast ions penetrating solids: An open quantum system approach with sources and sinks.
Phys. Rev. A 75, 032714 (2007)

Ar^{18+} + C	Charge Transfer	13.6 MeV/u	E/T

1486. H.-W. Hammer, T. A. Laehde, L. Platter
Effective-range corrections to three-body recombination for atoms with large scattering length.
Phys. Rev. A 75, 032715 (2007)

He + He + He	Association	1 mK	Th
He + He_2	Association	1 mK	Th

1487. A. L. Harris, D. H. Madison, J. L. Peacher, M. Foster, K. Bartschat, H. P. Saha
Effects of the final-state electron-ion interactions on the fully differential corss sections for heavy-particle-impact ionization of helium.
Phys. Rev. A 75, 032718 (2007)

C^{6+} + He	Total Scattering	100 MeV	Th
C^{6+} + He	Ionization	100 MeV	Th

1488. M. Yamazaki, T. Horio, N. Kishimoto, K. Ohno
Determination of outer molecular orbitals by collisional ionization experiments and comparison with Hartree-Fock, Kohn-Sham, and Dyson orbitals.
Phys. Rev. A 75, 032721 (2007)

He + N_2	Association	10−500 meV	E/T
He^{*} + N_2	Association	10−500 meV	E/T
He + N_2	Ionization	10−500 meV	E/T
He^{*} + N_2	Ionization	10−500 meV	E/T

1489. M. Hoshino, T. Kambara, Y. Kanai, R. Schuch, Y. Yamazaki
Multielectron processes in close collisions of slow Ne^{q+} (q = 1-9) ions with Ar atoms.
Phys. Rev. A 75, 032722 (2007)

Ne^{+} + Ar	Charge Transfer	5−14 keV	Exp
Ne^{2+} + Ar	Charge Transfer	5−14 keV	Exp
Ne^{3+} + Ar	Charge Transfer	5−14 keV	Exp
Ne^{4+} + Ar	Charge Transfer	5−14 keV	Exp
Ne^{5+} + Ar	Charge Transfer	5−14 keV	Exp
Ne^{7+} + Ar	Charge Transfer	5−14 keV	Exp
Ne^{9+} + Ar	Charge Transfer	5−14 keV	Exp
Ne^{+} + Ar	Ionization	5−14 keV	Exp
Ne^{2+} + Ar	Ionization	5−14 keV	Exp
Ne^{3+} + Ar	Ionization	5−14 keV	Exp
Ne^{4+} + Ar	Ionization	5−14 keV	Exp
Ne^{5+} + Ar	Ionization	5−14 keV	Exp
Ne^{7+} + Ar	Ionization	5−14 keV	Exp
Ne^{9+} + Ar	Ionization	5−14 keV	Exp

1490. X. Chu, A. Dalgarno, G. C. Groenenboom
Dynamic polarizabilities of rare-earth-metal atoms and dispersion coefficients for their interaction with helium atoms.
Phys. Rev. A 75, 032723 (2007)

He + Y	Elastic Scattering		Th
He + La	Elastic Scattering		Th
He + Ce	Elastic Scattering		Th
He + Pr	Elastic Scattering		Th
He + Nd	Elastic Scattering		Th
He + Pm	Elastic Scattering		Th
He + Sm	Elastic Scattering		Th
He + Eu	Elastic Scattering		Th
He + Gd	Elastic Scattering		Th
He + Tb	Elastic Scattering		Th
He + Dy	Elastic Scattering		Th
He + Ho	Elastic Scattering		Th
He + Er	Elastic Scattering		Th
He + Tm	Elastic Scattering		Th
He + Yb	Elastic Scattering		Th
He + Lu	Elastic Scattering		Th
He + Y	Interaction Potentials		Th
He + La	Interaction Potentials		Th
He + Ce	Interaction Potentials		Th
He + Pr	Interaction Potentials		Th
He + Nd	Interaction Potentials		Th
He + Pm	Interaction Potentials		Th
He + Sm	Interaction Potentials		Th
He + Eu	Interaction Potentials		Th
He + Gd	Interaction Potentials		Th
He + Tb	Interaction Potentials		Th
He + Dy	Interaction Potentials		Th
He + Ho	Interaction Potentials		Th
He + Er	Interaction Potentials		Th
He + Tm	Interaction Potentials		Th
He + Yb	Interaction Potentials		Th
He + Lu	Interaction Potentials		Th

1491. C. Champion, O. Boudrioua, C. Dal Cappello, Y. Sato, D. Ohsawa
Theoretical and experimental investigations of electron emission in $He^{2+} + H_2O$ collisions.
Phys. Rev. A 75, 032724 (2007)

$\mathbf{He^{2+} + H_2O}$	Total Scattering	50−10,000 keV/u	E/T
$\mathbf{He^{2+} + H_2O}$	Ionization	50−10,000 keV/u	E/T

1492. Y. Fukuyama, Y. Moriwaki, Y. Matsuo
Formation and dissociation of Ba^{+}*-He exciplexes at 3-25 K.
Phys. Rev. A 75, 032725 (2007)

$\mathbf{Ba^{+} + He}$	Association	3−25 K	E/T
$\mathbf{Ba^{+*} + He}$	Association	3−25 K	E/T

1493. S. Moal, M. Portier, N. Zahzam, M. Leduc
Lifetime of weakly bound dimers of ultracold metastable helium studied by photoassociation.
Phys. Rev. A 75, 033415 (2007)

He + He	Association	5−20 mW/cm^2	Exp

1494. T. V. Tscherbul, J. Klos, L. Rajchel, R. V. Krems
Fine and hyperfine interactions in cold YbF-He collisions in electromagnetic fields.
Phys. Rev. A 75, 033416 (2007)

He + YbF	Elastic Scattering	10^{-3}-1 K	Th
He + YbF	Excitation	10^{-3}-1 K	Th

1495. U. Kadhane, A. Kelkar, D. Misra, A. Kumar, L. C. Tribedi
Effect of giant plasmon excitations in single and double ionization of C_{60} in fast heavy-ion collisions.
Phys. Rev. A 75, 041201 (2007)

$\mathbf{O^{4+} + C_{60}}$	Ionization	50 MeV	Exp
$\mathbf{O^{5+} + C_{60}}$	Ionization	50 MeV	Exp
$\mathbf{O^{6+} + C_{60}}$	Ionization	50 MeV	Exp
$\mathbf{O^{7+} + C_{60}}$	Ionization	50 MeV	Exp
$\mathbf{O^{8+} + C_{60}}$	Ionization	50 MeV	Exp

1496. O. Docenko, M. Tamanis, R. Ferber, E. A. Pazyuk, A. Zaitsevskii, A. V. Stolyarov, A. Pashov, H. Knoeckel, E. Tiemann
Deperturbation treatment of the A $^1\Sigma^+ - b\ ^3\Pi$ complex of NaRb and prospects for ultracold molecule formation in X $^1\Sigma^+(v = 0; J = 0)$.
Phys. Rev. A 75, 042503 (2007)

Na + Rb	Interaction Potentials	770−477 nm	E/T

1497. P. Staanum, A. Pashov, H. Knoeckel, E. Tiemann
X $^1\Sigma^+$ and a $^3\Sigma^+$ states of LiCs studied by Fourier-transform spectroscopy.
Phys. Rev. A 75, 042513 (2007)

Li + Cs	Interaction Potentials	15.53−17.24×10^3 cm^{-1}	E/T

1498. S. Figueira da Silva, HP. Winter, F. Aumayr
Single- and double-electron capture cross sections for slow He^{2+} impact on O_2, H_2, and D_2.
Phys. Rev. A 75, 042706 (2007)

$\mathbf{He^{2+} + H_2}$	Charge Transfer	0.0035−2 keV/amu	Exp
$\mathbf{He^{2+} + D_2}$	Charge Transfer	0.0035−2 keV/amu	Exp
$\mathbf{He^{2+} + O_2}$	Charge Transfer	0.0035−2 keV/amu	Exp

1499. H. Luna, A.L.F. de Barros, J. A. Wyer, S.W.J. Scully, J. Lecointre, P.M.Y. Garcia, G. M. Sigaud, A.C.F. Santos, V. Senthil, M. B. Shah, C. J. Latimer, E. C. Montenegro
Water-molecule dissociation by proton and hydrogen impact.
Phys. Rev. A 75, 042711 (2007)

H + H_2O	Dissociation	8−3500 keV	Exp
H^+ + H_2O	Dissociation	8−3500 keV	Exp

1500. T. Kusakabe, H. Tawara, M. Kimura, J.-P. Gu, R. J. Buenker
Charge-transfer cross sections of H^+ ionis in collisions with Ne atoms in the energy range below 4.0 keV.
Phys. Rev. A 75, 044701 (2007)

H^+ + Ne	Charge Transfer	0.6−20 keV	E/T

1501. G. Quemener, J.-M. Launay, P. Honvault
Ultracold collisions between Li atoms and Li_2 diatoms in high vibrational states.
Phys. Rev. A 75, 050701 (2007)

Li + Li_2	De-excitation	10^{-9} K	Th
Li + Li_2	Elastic Scattering	10^{-9} K	Th

1502. R. Cabrera-Trujillo, E. Deumens, Y. Oehrn, O. Quinet, J. R. Sabin, N. Stolterfoht
Water-molecule fragmentation induced by charge exchange in slow collisions with He^+ and He^{2+} ions in the keV-energy region.
Phys. Rev. A 75, 052702 (2007)

He^+ + H_2O	Dissociation	0−10 keV/amu	E/T
He^{2+} + H_2O	Dissociation	0−10 keV/amu	E/T
He^+ + H_2O	Charge Transfer	0−10 keV/amu	E/T
He^{2+} + H_2O	Charge Transfer	0−10 keV/amu	E/T

1503. M. E. Galassi, R. D. Rivarola, P. D. Fainstein
Multiple electron emission from noble gases colliding with proton beams, including postcollisional effects.
Phys. Rev. A 75, 052708 (2007)

H^+ + Ne	Ionization	100−1000 keV	E/T
H^+ + Ar	Ionization	100−1000 keV	E/T

1504. D. Misra, A. Kelkar, U. Kadhane, A. Kumar, Y. P. Singh, L. C. Tribedi, P. D. Fainstein
Angular distribution of low-energy electron emission in collisions of 6-MeV/u base carbon ions with molecular hydrogen: Two-center mechanism and interference effect.
Phys. Rev. A 75, 052712 (2007)

C^{6+} + H_2	Total Scattering	6 MeV/u	E/T
C^{6+} + H_2	Ionization	6 MeV/u	E/T

1505. I. Mancev
Four-body continuum-distorted-wave model for charge exchange between hydrogenlike projectiles and atoms.
Phys. Rev. A 75, 052716 (2007)

He^+ + H	Charge Transfer	50−5000 keV	E/T
He^+ + He	Charge Transfer	50−5000 keV	E/T
Li^{2+} + He	Charge Transfer	50−5000 keV	E/T

1506. G. Guillon, T. Stoecklin, A. Voronin
Spin-rotation interaction in cold and ultracold collisions of $N_2{}^+(^2\Sigma^+)$ with ^3He and ^4He.
Phys. Rev. A 75, 052722 (2007)

$\mathbf{N_2{}^+ + He}$	De-excitation	10^{-6}-10^3 cm^{-1}	Th
$\mathbf{N_2{}^+ + He}$	Energy Transfer	10^{-6}-10^3 cm^{-1}	Th

1507. B. Seredyuk, H. Bruhns, D. W. Savin, D. Seely, H. Aliabadi, E. Galutschek, C. C. Havener
Low-energy electron capture by Ne^{2+} ions from H(D).
Phys. Rev. A 75, 054701 (2007)

$\mathbf{Ne^{2+} + H}$	Charge Transfer	60−1000 eV/u	E/T
$\mathbf{Ne^{2+} + D}$	Charge Transfer	60−1000 eV/u	E/T

1508. M. Duerr, B. Najjari, M. Schulz, A. Dorn, R. Moshammer, A. B. Voitkiv, J. Ullrich
Analysis of experimental data for ion-impact single ionization of helium with Monte Carlo event generators based on quantum theory.
Phys. Rev. A 75, 062708 (2007)

$\mathbf{C^{6+} + He}$	Total Scattering	3.6−100 MeV/u	Th
$\mathbf{Au^{53+} + He}$	Total Scattering	3.6−100 MeV/u	Th
$\mathbf{C^{6+} + He}$	Ionization	3.6−100 MeV/u	Th
$\mathbf{Au^{53+} + He}$	Ionization	3.6−100 MeV/u	Th

1509. J. Rajput, C. P. Safvan
Kinetic energy distributions in ion-induced CO fragmentation: Signature of shallow states in multiply charged CO.
Phys. Rev. A 75, 062709 (2007)

$\mathbf{Ar^{8+} + CO}$	Dissociation	1.1 a.u.	Exp
$\mathbf{Ar^{8+} + CO}$	Ionization	1.1 a.u.	Exp

1510. J. R. Shepard
Calculations of recombination rates for cold ^4He atoms from atom-dimer phase shifts and determination of universal scaling functions.
Phys. Rev. A 75, 062713 (2007)

He + He	Association	1−10,000 μ K	Th

1511. J. M. McNamara, R.J.W. Stas, W. Hogervorst, W. Vassen
Heteronuclear ionizing collisions between laser-colled metastable helium atoms.
Phys. Rev. A 75, 062715 (2007)

He + He	Association	0.01−100 mK	E/T
$\mathbf{He^* + He}$	Association	0.01−100 mK	E/T
$\mathbf{He^* + He^*}$	Association	0.01−100 mK	E/T
He + He	Ionization	0.01−100 mK	E/T
$\mathbf{He^* + He}$	Ionization	0.01−100 mK	E/T
$\mathbf{He^* + He^*}$	Ionization	0.01−100 mK	E/T

1512. A. B. Voitkiv, B. Najjari, J. Ullrich
Excitation of heavy hydrogenlike ions in relativistic collisions.
Phys. Rev. A 75, 062716 (2007)

$\mathbf{Zr^{39+} + A}$	Excitation	0.1−2 GeV/u	E/T
$\mathbf{Bi^{82+} + Kr}$	Excitation	0.1−2 GeV/u	E/T
$\mathbf{U^{91+} + A}$	Excitation	0.1−2 GeV/u	E/T
$\mathbf{U^{92+} + A}$	Excitation	0.1−2 GeV/u	E/T

1513. C. Y. Lin, P. C. Stancil, Y. Li, J.-P. Gu, H.-P. Liebermann, R. J. Buenker, M. Kimura
Vibrationally resolved charge transfer for proton collisions with CO and H collisions with CO^+.
Phys. Rev. A 76, 012702 (2007)

H + CO$^+$	Charge Transfer	0.5–1000 eV/u	Th
H$^+$ + CO	Charge Transfer	0.5–1000 eV/u	Th

1514. J. S. Cohen, A. Derevianko
Long-range forces between two excited mercury atoms and associative ionization.
Phys. Rev. A 76, 012706 (2007)

Hg + Hg	Association	10^{-10}-10^{-3} a.u.	Th
Hg* + Hg	Association	10^{-10}-10^{-3} a.u.	Th
Hg* + Hg*	Association	10^{-10}-10^{-3} a.u.	Th
Hg + Hg	Interaction Potentials	10^{-10}-10^{-3} a.u.	Th
Hg* + Hg	Interaction Potentials	10^{-10}-10^{-3} a.u.	Th
Hg* + Hg*	Interaction Potentials	10^{-10}-10^{-3} a.u.	Th

1515. R. Unal, P. Richard, I. Ben-Itzhak, C. L. Cocke, M. J. Singh, H. Tawara, N. Woody
Systematic study of charge-state and energy dependences of transfer-ionization to single-electron-capture ratios for F^{q+} ions incident on He.
Phys. Rev. A 76, 012710 (2007)

F^{4+} + He	Charge Transfer	0.5–2.5 MeV/u	Exp
F^{5+} + He	Charge Transfer	0.5–2.5 MeV/u	Exp
F^{6+} + He	Charge Transfer	0.5–2.5 MeV/u	Exp
F^{7+} + He	Charge Transfer	0.5–2.5 MeV/u	Exp
F^{8+} + He	Charge Transfer	0.5–2.5 MeV/u	Exp
F^{9+} + He	Charge Transfer	0.5–2.5 MeV/u	Exp
F^{4+} + He	Ionization	0.5–2.5 MeV/u	Exp
F^{5+} + He	Ionization	0.5–2.5 MeV/u	Exp
F^{6+} + He	Ionization	0.5–2.5 MeV/u	Exp
F^{7+} + He	Ionization	0.5–2.5 MeV/u	Exp
F^{8+} + He	Ionization	0.5–2.5 MeV/u	Exp
F^{9+} + He	Ionization	0.5–2.5 MeV/u	Exp

1516. N. Sisourat, J. Caillat, A. Dubois, P. D. Fainstein
Coherent electron emission from molecules induced by swift ion impact.
Phys. Rev. A 76, 012718 (2007)

H$^+$ + H$_2$	Ionization	2.5–63 MeV/u	Th
C^{6+} + H$_2$	Ionization	2.5–63 MeV/u	Th
Kr^{34+} + H$_2$	Ionization	2.5–63 MeV/u	Th

1517. J.-Y. Zhang, Z.-C. Yan, D. Vrinceanu, J. F. Babb, H. R. Sadeghpour
Accurate long-range coefficients for two excited like isotope He atoms: He(2 $^1P)--He(2\ ^1P)$, He(2 $^1P)--He(2\ ^3P)$, and He(2 $^3P)--He(2\ ^3P)$.
Phys. Rev. A 76, 012723 (2007)

He + He	Interaction Potentials		Th
He* + He	Interaction Potentials		Th
He* + He*	Interaction Potentials		Th

1518. C. Klempt, T. Henninger, O. Topic, J. Will, W. Ertmer, E. Tiemann, J. Arlt
$^{40}K-^{87}Rb$ Feshbach resonances: Modeling the interatomic potential.
Phys. Rev. A 76, 020701 (2007)

K + Rb	Interaction Potentials		Exp

1519. A. Pashov, O. Docenko, M. Tamanis, R. Ferber, H. Knockel, E. Tiemann
Coupling of the $X^1\Sigma^+$ and a $^3\Sigma^+$ states of KRb.
Phys. Rev. A 76, 022511 (2007)

K + Rb	Interaction Potentials		E/T

1520. S. Bubin, M. Stanke, D. Kedziera, L. Adamowicz
Improved calculations of the lowest vibrational transitions in HeH^+.
Phys. Rev. A 76, 022512 (2007)

H^+ + He	Interaction Potentials		Th

1521. L. B. Zhao, A. Watanabe, P. C. Stancil, M. Kimura
Ab initio investigation of electron capture by Cl^{7+} ions from H.
Phys. Rev. A 76, 022701 (2007)

Cl^{7+} + H	Charge Transfer	10^{-4}-1000 eV/u	Th

1522. D. Yu, X. Cai, R.-F. Lu, F. Ruan, C. Shao, H. Zhang, Y. Cui, J. Lu, X. J. Xu, J. Shao, B. Ding, Z. Yang, X. Chen, Z. Liu
Slow isocharged sequence ions with helium collisions: Projectile core dependence.
Phys. Rev. A 76, 022710 (2007)

A^{6+} + He	Charge Transfer	0.35−0.49 a.u.	Exp
A^{7+} + He	Charge Transfer	0.35−0.49 a.u.	Exp
A^{8+} + He	Charge Transfer	0.35−0.49 a.u.	Exp
A^{9+} + He	Charge Transfer	0.35−0.49 a.u.	Exp
A^{11+} + He	Charge Transfer	0.35−0.49 a.u.	Exp

1523. R. Gonzalez-Ferez, M. Weidemuller, P. Schmelcher
Photoassociation of cold heteronuclear dimers in static electric fields.
Phys. Rev. A 76, 023402 (2007)

Li + Cs	Association	0-10^{-5} a.u.	Th

1524. M. Tacconi, L. Gonzalez-Sanchez, E. Bodo, F. A. Gianturco
Collisions of $NH(^3\Sigma^-)$ with Rb and Cs at ultralow energies: A quantum study of rotational cooling efficiency.
Phys. Rev. A 76, 032702 (2007)

Rb + NH	De-excitation	10^{-7}-1−$^{-1}$ cm^{-1}	Th
Cs + NH	De-excitation	10^{-7}-1−$^{-1}$ cm^{-1}	Th
Rb + NH	Elastic Scattering	10^{-7}-1−$^{-1}$ cm^{-1}	Th
Cs + NH	Elastic Scattering	10^{-7}-1−$^{-1}$ cm^{-1}	Th
Rb + NH	Excitation	10^{-7}-1−$^{-1}$ cm^{-1}	Th
Cs + NH	Excitation	10^{-7}-1−$^{-1}$ cm^{-1}	Th

1525. D. Bodewits, R. Hoekstra
Electron capture in collisions between O^{6+} ions and H_2O molecules.
Phys. Rev. A 76, 032703 (2007)

O^{6+} + H_2O	Charge Transfer	0.1−7.5 keV/u	Exp

1526. J. Mitroy, J.-Y. Zhang
Long-range dispersion interactions. II. Alkali-metal and rare-gas atoms.
Phys. Rev. A 76, 032706 (2007)

Li + Ne	Interaction Potentials		Th
Li + Ar	Interaction Potentials		Th
Li + Kr	Interaction Potentials		Th
Li + Xe	Interaction Potentials		Th
Ne + Ne	Interaction Potentials		Th
Ne + Ar	Interaction Potentials		Th
Ne + Kr	Interaction Potentials		Th
Ne + Xe	Interaction Potentials		Th
Na + Ne	Interaction Potentials		Th
Na + Ar	Interaction Potentials		Th
Na + Kr	Interaction Potentials		Th
Na + Xe	Interaction Potentials		Th
Ar + Ar	Interaction Potentials		Th
Ar + Kr	Interaction Potentials		Th
Ar + Xe	Interaction Potentials		Th
K + Ne	Interaction Potentials		Th
K + Ar	Interaction Potentials		Th
K + Kr	Interaction Potentials		Th
K + Xe	Interaction Potentials		Th
Kr + Kr	Interaction Potentials		Th
Kr + Xe	Interaction Potentials		Th
Rb + Ne	Interaction Potentials		Th
Rb + Ar	Interaction Potentials		Th
Rb + Kr	Interaction Potentials		Th
Rb + Xe	Interaction Potentials		Th
Xe + Xe	Interaction Potentials		Th

1527. M. Schulz, M. Duerr, B. Najjari, R. Moshammer, J. Ullrich
Reconciliation of measured fully differential single ionization data with the first Born approximation convoluted with elastic scattering.
Phys. Rev. A 76, 032712 (2007)

C^{6+} + He	Total Scattering	100 MeV/u	Exp
C^{6+} + He	Ionization	100 MeV/u	Exp

1528. L. F. Errea, C. Illescas, L. Mendez, B. Pons, I. Rabadan, A. Riera
Classical calculation of ionization and electron-capture total cross sections in H^+ + H_2O collisions.
Phys. Rev. A 76, 040701 (2007)

H^+ + H_2O	Charge Transfer	25−5000 keV	Th
H^+ + H_2O	Ionization	25−5000 keV	Th

1529. B. Lepetit, R. Abrol, A. Kuppermann
Geometric phase effects in H_3 predissociation.
Phys. Rev. A 76, 040702 (2007)

H + H_2	Interaction Potentials		Th

1530. G. Buffa
Comparison between semiclassical and quantum mechanical calculations for collisional broadening and shift of HCO^+ rotational lines.
Phys. Rev. A 76, 042509 (2007)

HCO^+ + He	Line Broadening	77−296 K	Th
HCO^+ + Ar	Line Broadening	77−296 K	Th

1531. T. Ferger, M. Schulz, D. Fischer, B. Najjari, R. Moshammer, J. Ullrich
Triple-differential cross sections for target ionization with simultaneous projectile detachment in 200-keV H^- + He collisions.
Phys. Rev. A 76, 042708 (2007)

H^- + He	Total Scattering	200 keV	Exp
H^- + He	Detachment	200 keV	Exp
H^- + He	Ionization	200 keV	Exp

1532. T. Kusakabe, K. Gotanda, M. Kimura, S. N. Rai, H.-P. Liebermann, R. J. Buenker
Vibrational effect on charge-transfer processes in collisions of H^+ and O^+ ions with C_2H_4 molecules at energies below 10 keV/u.
Phys. Rev. A 76, 042711 (2007)

H^+ + C_2H_4	Charge Transfer	0.018−4 keV/amu	E/T
O^+ + C_2H_4	Charge Transfer	0.018−4 keV/amu	E/T

1533. L. Ohlinger, R. C. Forrey, T.-G. Lee, P. C. Stancil
H_2 dissociation due to collisions with He.
Phys. Rev. A 76, 042712 (2007)

He + H_2	Dissociation	100-10^5 cm^{-1}	Th

1534. A. G. Donchev
Ab initio correlated calculations of rare-gas dimer quadrupoles.
Phys. Rev. A 76, 042713 (2007)

He + He	Interaction Potentials		Th
He + Ne	Interaction Potentials		Th
He + Ar	Interaction Potentials		Th
He + Kr	Interaction Potentials		Th
Ne + He	Interaction Potentials		Th
Ne + Ne	Interaction Potentials		Th
Ne + Ar	Interaction Potentials		Th
Ne + Kr	Interaction Potentials		Th
Ar + He	Interaction Potentials		Th
Ar + Ne	Interaction Potentials		Th
Ar + Ar	Interaction Potentials		Th
Ar + Kr	Interaction Potentials		Th
Kr + He	Interaction Potentials		Th
Kr + Ne	Interaction Potentials		Th
Kr + Ar	Interaction Potentials		Th
Kr + Kr	Interaction Potentials		Th

1535. T.-G. Lee, S. Yu. Ovchinnikov, J. Sternberg, V. Chupryna, D. R. Schultz, J. H. Macek
Quantum treatment of continuum electrons in the fields of moving charges.
Phys. Rev. A 76, 050701 (2007)

H^+ + H	Ionization	5−25 keV	Th

1536. R. C. Forrey, A. Dalgarno, Y. V. Vanne, A. Saenz, P. Froelich
Nonadiabatic coupling in cold collisions of spin-polarized metastable hydrogen atoms.
Phys. Rev. A 76, 052709 (2007)

H + H	De-excitation	10^{-5}-10^{-1} K	E/T
H^* + H^*	De-excitation	10^{-5}-10^{-1} K	E/T

1537. T. G. Winter
Electron transfer, excitation, and ionization in $\alpha - H$ collisions studied with a Sturmian basis.
Phys. Rev. A 76, 062702 (2007)

$\mathbf{He^{2+} + H}$	Charge Transfer	0.003−38.4 MeV	Th
$\mathbf{He^{2+} + H}$	Excitation	0.003−38.4 MeV	Th
$\mathbf{He^{2+} + H}$	Ionization	0.003−38.4 MeV	Th

1538. T. J. Beams, I. B. Whittingham, G. Peach
Autoionization of spin-polarized metastable helium in tight anisotropic harmonic traps.
Phys. Rev. A 76, 062707 (2007)

$\mathbf{He + He^*}$	Association		Th
$\mathbf{He^* + He^*}$	Association		Th
$\mathbf{He + He^*}$	Ionization		Th
$\mathbf{He^* + He^*}$	Ionization		Th

1539. J. M. Sanders, R. D. DuBois, S. T. Manson, S. Datz, E. F. Deveney, H. F. Krause, J. L. Shinpaugh, C. R. Vane
Ionization in fast atom-atom collisions: The influence and scaling behavior of electron-electron and electron-nucleus interactions.
Phys. Rev. A 76, 062710 (2007)

He + He	Ionization	100−500 keV/u	Exp
Li + He	Ionization	100−500 keV/u	Exp
C + He	Ionization	100−500 keV/u	Exp
O + He	Ionization	100−500 keV/u	Exp
Ne + He	Ionization	100−500 keV/u	Exp

1540. E. Testa, P. N. Abufager, F. Bosch, A. Brauning-Demian, H. Brauning, M. Chevallier, C. Cohen, D. Dauvergne, A. Gumberidze, A. L'Hoir, R. Kirsch, C. Kozhuharov, D. Liesen, P. H. Mokler, J.-C. Poizat, C. Ray, R. D. Rivarola, J. P. Rozet, Th. Stoehlker, S. Toleikis, M. Toulemonde, D. Vernhet, P. Verma
Using channeling properties for studying the impact-parameter dependence of electron capture by 20-MeV/u uranium ions in a silicon crystal.
Phys. Rev. A 76, 062901 (2007)

$\mathbf{U^{91+} + Si}$	Charge Transfer	20 MeV/u	Exp

1541. D. Strohschein, D. Rohrbein, T. Kirchner, S. Fritzsche, J. Baran, J. A. Tanis
Nonstatistical enhancement of the 1s2s2p ^4P state in electron transfer in 0.5-1.0-MeV/u $C^{4,5+}$ + He and Ne collisions.
Phys. Rev. A 77, 022706 (2007)

$\mathbf{C^{4+} + He}$	Charge Transfer	0.5−1 MeV/u	Exp
$\mathbf{C^{4+} + Ne}$	Charge Transfer	0.5−1 MeV/u	Exp
$\mathbf{C^{5+} + He}$	Charge Transfer	0.5−1 MeV/u	Exp
$\mathbf{C^{5+} + Ne}$	Charge Transfer	0.5−1 MeV/u	Exp

1542. S. De, J. Rajput, A. Roy, P. N. Ghosh, C. P. Safvan
Ion-induced dissociation dynamics of acetylene.
Phys. Rev. A 77, 022708 (2007)

$\mathbf{Ar^{8+} + C_2H_2}$	Dissociation	1.2 MeV	Exp

1543. S. Otranto, R. E. Olson
Charge exchange and x-ray emission cross sections for multiply charged ions colliding with H_2O.
Phys. Rev. A 77, 022709 (2007)

C^{6+} + H_2O	Charge Transfer	0.1−100 keV/u	Th
O^{8+} + H_2O	Charge Transfer	0.1−100 keV/u	Th
Ne^{10+} + H_2O	Charge Transfer	0.1−100 keV/u	Th
Ar^{18+} + H_2O	Charge Transfer	0.1−100 keV/u	Th
Fe^{26+} + H_2O	Charge Transfer	0.1−100 keV/u	Th

1544. M. F. Ciappina, L. B. Madsen
Laser-assisted ion-atom collisions: Plateau, cutoff, and multiphoton peaks.
Phys. Rev. A 77, 023412 (2007)

H^+ + He	Ionization	2.5 MeV	Th

1545. S. Martinez, S. Otranto, C. R. Garibotti
Fully differential ionization cross sections for proton collisions with multielectronic targets.
Phys. Rev. A 77, 024701 (2007)

H^+ + He	Total Scattering	2 MeV	Th
H^+ + Li	Total Scattering	2 MeV	Th
H^+ + Be	Total Scattering	2 MeV	Th
H^+ + He	Ionization	2 MeV	Th
H^+ + Li	Ionization	2 MeV	Th
H^+ + Be	Ionization	2 MeV	Th

1546. G. Quemener, N. Balakrishnan, R. V. Krems
Vibrational energy transfer in ultracold molecule-molecule collisions.
Phys. Rev. A 77, 030704 (2007)

H_2 + H_2	Elastic Scattering	10^{-6}-10^2 K	Th
H_2 + H_2	Energy Transfer	10^{-6}-10^2 K	Th

1547. L. Morgus, T. Morgus, T. Drake, J. Huennekens
Hyperfine state-changing collisions of $Cs(6P_{1/2})$ atoms with argon perturbers.
Phys. Rev. A 77, 032704 (2007)

Cs + Ar	Line Broadening	23 deg C	Exp
Cs + Ar	De-excitation	23 deg C	Exp

1548. I. Fijal-Kirejczyk, M. Jaskola, W. Czarnacki, A. Korman, D. Banas, J. Braziewicz, U. Majewska, J. Semaniak, M. Pajek, W. Kretschmer, T. Mukoyama, D. Trautmann, G. Lapicki
Coupling and binding-saturation effects in L-subshell ionization of heavy atoms by 0.3-1.3-MeV/amu Si ions.
Phys. Rev. A 77, 032706 (2007)

Si^{3+} + Au	Ionization	8.5−36 MeV	E/T
Si^{3+} + Bi	Ionization	8.5−36 MeV	E/T
Si^{3+} + Th	Ionization	8.5−36 MeV	E/T
Si^{3+} + U	Ionization	8.5−36 MeV	E/T
Si^{5+} + Au	Ionization	8.5−36 MeV	E/T
Si^{5+} + Bi	Ionization	8.5−36 MeV	E/T
Si^{5+} + Th	Ionization	8.5−36 MeV	E/T
Si^{5+} + U	Ionization	8.5−36 MeV	E/T

Si^{6+} + Au	Ionization	8.5−36 MeV	E/T
Si^{6+} + Bi	Ionization	8.5−36 MeV	E/T
Si^{6+} + Th	Ionization	8.5−36 MeV	E/T
Si^{6+} + U	Ionization	8.5−36 MeV	E/T

1549. L. Liu, J. G. Wang, R. K. Janev
Dynamics of He^{2+} + H(1s) excitation and electron-capture processes in Debye plasmas.
Phys. Rev. A 77, 032709 (2007)

He^{2+} + H	Charge Transfer	5−300 keV/amu	Th
He^{2+} + H	Interaction Potentials	5−300 keV/amu	Th
He^{2+} + H	Excitation	5−300 keV/amu	Th

1550. C. A. Tachino, M. E. Galassi, R. D. Rivarola
Postcollisional effects in multiple ionization of diatomic molecules by ion impact.
Phys. Rev. A 77, 032714 (2007)

H^{+} + CO	Ionization	10^2-1.5×10^4 keV/amu	Th
H^{+} + N_2	Ionization	10^2-1.5×10^4 keV/amu	Th
H^{+} + O_2	Ionization	10^2-1.5×10^4 keV/amu	Th

1551. M. Lysebo, L. Veseth
Cold collisions between atoms and diatomic molecules.
Phys. Rev. A 77, 032721 (2007)

O_2 + He	Elastic Scattering	10^{-9}-10^{-2} K	Th
K_2 + K	Elastic Scattering	10^{-9}-10^{-2} K	Th
Na_2 + Na	Elastic Scattering	10^{-9}-10^{-2} K	Th
O_2 + He	Excitation	10^{-9}-10^{-2} K	Th
K_2 + K	Excitation	10^{-9}-10^{-2} K	Th
Na_2 + Na	Excitation	10^{-9}-10^{-2} K	Th

1552. V. Horvat, R. L. Watson, J. M. Blackadar
Effects of multiple ionization on the spectra of L x rays excited in heavy-ion collisions.
Phys. Rev. A 77, 032724 (2007)

Ne + In	Ionization	6−15 MeV/amu	Exp
Ne + Sn	Ionization	6−15 MeV/amu	Exp
Ne + Sm	Ionization	6−15 MeV/amu	Exp
Ne + Tb	Ionization	6−15 MeV/amu	Exp
Ne + Ho	Ionization	6−15 MeV/amu	Exp
Ar + In	Ionization	6−15 MeV/amu	Exp
Ar + Sn	Ionization	6−15 MeV/amu	Exp
Ar + Sm	Ionization	6−15 MeV/amu	Exp
Ar + Tb	Ionization	6−15 MeV/amu	Exp
Ar + Ho	Ionization	6−15 MeV/amu	Exp
Kr + In	Ionization	6−15 MeV/amu	Exp
Kr + Sn	Ionization	6−15 MeV/amu	Exp
Kr + Sm	Ionization	6−15 MeV/amu	Exp
Kr + Tb	Ionization	6−15 MeV/amu	Exp
Kr + Ho	Ionization	6−15 MeV/amu	Exp
Xe + In	Ionization	6−15 MeV/amu	Exp
Xe + Sn	Ionization	6−15 MeV/amu	Exp
Xe + Sm	Ionization	6−15 MeV/amu	Exp
Xe + Tb	Ionization	6−15 MeV/amu	Exp
Xe + Ho	Ionization	6−15 MeV/amu	Exp

1553. M.-J. Lu, K. S. Hardman, J. D. Weinstein, B. Zygelman
Fine-structure-changing collisions in atomic titanium.
Phys. Rev. A 77, 060701 (2007)

Ti + He	Elastic Scattering	5.2−19.9 K	E/T
Ti + He	Excitation	5.2−19.9 K	E/T

1554. M. F. Ciappina, M. Schulz, T. Kirchner, D. Fischer, R. Moshammer, J. Ullrich
Double ionization of helium by ion impact analyzed using four-body Dalitz plots.
Phys. Rev. A 77, 062706 (2008)

H^+ + He	Ionization	6 MeV	E/T

1555. E. Wells, T. Nishide, H. Tawara, R. L. Watson, K. D. Carnes, I. Ben-Itzhak
Soft fragmentation of carbon monoxide by slow highly charged ions.
Phys. Rev. A 77, 064701 (2007)

C^{6+} + CO	Dissociation	0.39−0.8 a.u.	Exp
Ar^{11+} + CO	Dissociation	0.39−0.8 a.u.	Exp

1556. H. Bruhns, H. Kreckel, D. W. Savin, D. G. Seely, C. C. Havener
Low-energy charge transfer for collisions of Si^{3+} with atomic hydrogen.
Phys. Rev. A 77, 064702 (2007)

Si^{3+} + H	Charge Transfer	44−2444 eV/u	Exp

1557. J. Grucker, J. Baudon, F. Perales, G. Dutier, G. Vassilev, V. Bocvarski, M. Ducloy
Study of low-energy resonant metastability exchange in argon by a pulsed merged beam technique.
J. Phys. B 41, 021001 (2008)

Ar + Ar	De-excitation	5−25 meV	Exp
Ar + Ar	Energy Transfer	5−25 meV	Exp

1558. Y. Morishita, N. Saito, I. H. Suzuki, H. Fukuzawa, X. J. Liu, K. Sakai, G. Pruemper, K. Ueda, H. Iwayama, K. Nagaya, M. Yao, K. Kreidi, M. S. Schoeffler, T. Jahnke, S. Schoessler, R. Doerner, T. Weber, J. Harries, Y. Tamenori
Evidence of interatomic Coulombic decay in ArKr after Ar 2p Auger decay.
J. Phys. B 41, 025101 (2008)

Ar + Kr	Energy Transfer		Exp
Ar^{2+} + Kr^+	Energy Transfer		Exp

1559. T. Vertesi, R. Englman
Analytic study of some excited state effects in a slightly bent Renner-Teller molecule.
J. Phys. B 41, 025102 (2008)

CH^+ + CH	Interaction Potentials		Th

1560. L. Gulyas, A. Igarashi, P. D. Fainstein, T. Kirchner
Single and double ionization of helium: The axial symmetry.
J. Phys. B 41, 025202 (2008)

H^+ + He	Ionization	100−200 keV	Th

1561. Lj. M. Ignjatovic, A. A. Mihajlov, A. N. Klyucharev
The rate coefficients of the chemi-ionization processes in slow Li*(n) + Na collisions.
J. Phys. B 41, 025203 (2008)

Li + Na	Ionization	700−1100 K	Exp
Li* + Na	Ionization	700−1100 K	Exp

1562. C. Bahrim, V. Khadilkar
Depolarization of Ne*$(2p_2)$ atoms induced by isotropic collisions with $He(1s^2)$ atoms at temperatures between 10 K and 1000 K.
J. Phys. B 41, 035203 (2008)

Ne + He	De-excitation	10−1000 K	E/T
Ne* + He	De-excitation	10−1000 K	E/T

1563. C. A. DeJoseph Jr., V. I. Demidov, J. Blessington
Comparison of helium two-step plasma emission with that predicted from measured cross sections.
J. Phys. B 41, 085701 (2008)

He + He	Fluorescence	17 eV	Exp
He + He	Ionization	17 eV	Exp

1564. M.-F. Gu, C. T. Holcomb, R. J. Jayakuma, S. L. Allen
Atomic models for the motional Stark effect diagnostic.
J. Phys. B 41, 095701 (2008)

H* + H_2	De-excitation	2−200 keV	E/T
H + H	Excitation	2−200 keV	E/T

1565. A. B. Voitkiv, B. Najjari, A. Surzhykov
Charge states and effective loss cross sections for 33 TeV lead ions penetrating aluminum and gold foils.
J. Phys. B 41, 111001 (2008)

Pb^{81+} + Be	Ionization	33 TeV	Th
Pb^{81+} + C	Ionization	33 TeV	Th
Pb^{81+} + Al	Ionization	33 TeV	Th
Pb^{81+} + Ar	Ionization	33 TeV	Th
Pb^{81+} + Cu	Ionization	33 TeV	Th
Pb^{81+} + Kr	Ionization	33 TeV	Th
Pb^{81+} + Ag	Ionization	33 TeV	Th
Pb^{81+} + Sn	Ionization	33 TeV	Th
Pb^{81+} + Xe	Ionization	33 TeV	Th
Pb^{81+} + Au	Ionization	33 TeV	Th
Pb^{82+} + Be	Ionization	33 TeV	Th
Pb^{82+} + C	Ionization	33 TeV	Th
Pb^{82+} + Al	Ionization	33 TeV	Th
Pb^{82+} + Ar	Ionization	33 TeV	Th
Pb^{82+} + Cu	Ionization	33 TeV	Th
Pb^{82+} + Kr	Ionization	33 TeV	Th
Pb^{82+} + Ag	Ionization	33 TeV	Th
Pb^{82+} + Sn	Ionization	33 TeV	Th
Pb^{82+} + Xe	Ionization	33 TeV	Th
Pb^{82+} + Au	Ionization	33 TeV	Th

1566. M. Foster, J. Colgan, M. S. Pindzola
Doubly differential cross sections for the proton-impact double ionization of helium.
J. Phys. B 41, 111002 (2008)

$\mathbf{H^+ + He}$	Total Scattering	6 MeV	Th
$\mathbf{H^+ + He}$	Ionization	6 MeV	Th

1567. G. Lapicki
Scaling of analytical cross sections for K-shell ionization by nonrelativistic protons to cross sections by protons at relativistic velocities.
J. Phys. B 41, 115201 (2008)

$\mathbf{H^+ + C}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + Na}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + Al}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + Ca}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + Ti}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + Fe}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + Ni}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + Cu}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + Kr}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + Mo}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + Ag}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + Sn}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + La}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + Nd}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + Hf}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + Au}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + U}$	Ionization	0.5−5000 MeV	Th
$\mathbf{H^+ + A}$	Ionization	0.5−5000 MeV	Th

1568. B. Najjari, A. B. Voitkiv
Simultaneous loss and excitation of projectile electrons in relativistic collisions of U^{90+} $(1s^2)$ ions with atoms.
J. Phys. B 41, 115202 (2008)

$\mathbf{U^{90+} + Ar}$	Ionization	223.2 MeV/u	Th
$\mathbf{U^{90+} + Kr}$	Ionization	223.2 MeV/u	Th
$\mathbf{U^{90+} + Xe}$	Ionization	223.2 MeV/u	Th
$\mathbf{U^{90+} + A}$	Ionization	223.2 MeV/u	Th

1569. V. P. Shevelko, M. S. Litsarev, H. Tawara
Multiple ionization of fast heavy ions by neutral atoms in the energy deposition model.
J. Phys. B 41, 115204 (2008)

$\mathbf{Xe^{18+} + He}$	Ionization	1−100 MeV/u	Th
$\mathbf{Xe^{18+} + Ne}$	Ionization	1−100 MeV/u	Th
$\mathbf{Xe^{18+} + Ar}$	Ionization	1−100 MeV/u	Th
$\mathbf{Xe^{18+} + Xe}$	Ionization	1−100 MeV/u	Th
$\mathbf{Xe^{18+} + N_2}$	Ionization	1−100 MeV/u	Th
$\mathbf{U^{28+} + Ar}$	Ionization	1−100 MeV/u	Th

1570. I. Murakami, J. Yan, H. Sato, M. Kimura, R. K. Janev, T. Kato
Excitation, ionization, and electron capture cross sections for collisions of Li^{3+} with ground state and excited hydrogen atoms.
At. Data Nucl. Data Tables 94, 161 (2007)

Li^{3+} + H	Charge Transfer	$10\text{-}10^7$ eV/u	E/T
Li^{3+} + H^*	Charge Transfer	$10\text{-}10^7$ eV/u	E/T
Li^{3+} + H	Excitation	$10\text{-}10^7$ eV/u	E/T
Li^{3+} + H^*	Excitation	$10\text{-}10^7$ eV/u	E/T
Li^{3+} + H	Ionization	$10\text{-}10^7$ eV/u	E/T
Li^{3+} + H^*	Ionization	$10\text{-}10^7$ eV/u	E/T

1571. A. Faure, N. Crimier, C. Ceccarelli, P. Valiron, L. Wiesenfeld, M.-L. Dubernet
Quasi-classical rate coefficient calculations for the rotational (de)excitation of *H_2O* by *H_2*.
Astron. Astrophys. 472, 1029 (2007)

H_2 + H_2O	De-excitation	20−2000 K	Th
H_2 + H_2O^*	De-excitation	20−2000 K	Th
H_2 + H_2O	Excitation	20−2000 K	Th

1572. L.F.M. Vincent, A. Spielfiedel, F. Lique
Rotational excitation of SiS molecules by collisions with He atoms.
Astron. Astrophys. 472, 1037 (2007)

He + SiS	Excitation	0−1500 cm^{-1}	Th

1573. P. Beiersdorfer, L. Schweikhard, P. Liebisch, G. V. Brown
X-ray signature of charge exchange in the spectra of L-shell iron ions.
Astrophys. J. 672, 726 (2008)

Fe^{16+} + O_2	Charge Transfer	1.10−2.45 keV	Exp
Fe^{17+} + O_2	Charge Transfer	1.10−2.45 keV	Exp
Fe^{18+} + O_2	Charge Transfer	1.10−2.45 keV	Exp
Fe^{19+} + O_2	Charge Transfer	1.10−2.45 keV	Exp
Fe^{20+} + O_2	Charge Transfer	1.10−2.45 keV	Exp
Fe^{21+} + O_2	Charge Transfer	1.10−2.45 keV	Exp
Fe^{22+} + O_2	Charge Transfer	1.10−2.45 keV	Exp
Fe^{23+} + O_2	Charge Transfer	1.10−2.45 keV	Exp

1574. S. Andersson, G. Barinovs, G. Nyman
Rotational transitions of *CO^+* induced by atomic hydrogen.
Astrophys. J. 678, 1042 (2008)

H + CO^+	Excitation	0−300 eV	Th

1575. N. Djuric, S. J. Smith, J. Simcic, A. Chutjian
Absolute single and multiple charge exchange cross sections for highly charged C, N, and O ions colliding with *CH_4*.
Astrophys. J. 679, 1661 (2008)

C^{3+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th
C^{4+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th
C^{5+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th
C^{6+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th
N^{4+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th
N^{5+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th
N^{6+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th
N^{7+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th
O^{5+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th
O^{6+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th
O^{7+} + CH_4	Charge Transfer	1.8−3.5 keV/amu	Th

1576. D. Ben Abdallah, K. Hammami, F. Najar, N. Jaidane, Z. Ben Lakhdar, M. L. Senent, G. Chambaud, M. Hochlaf
Low-temperature rate constants for rotational excitation and de-excitation of C_3 (X $^1\Sigma_g{}^+$) by collisions with He (^2S).
Astrophys. J. 686, 379 (2008)

C_3 + He	De-excitation	5−15 K	Th
C_3 + He	Excitation	5−15 K	Th

1577. O. Martinez Jr., N. B. Betts, S. M. Villano, N. Eyet, T. P. Snow, V. M. Bierbaum
Gas phase study of C^+ reactions of interstellar relevance.
Astrophys. J. 686, 1486 (2008)

C^+ + H_2O	Association	300 K	Exp
C^+ + CH_4	Association	300 K	Exp
C^+ + NH_3	Association	300 K	Exp
C^+ + O_2	Association	300 K	Exp
C^+ + C_2H_2	Association	300 K	Exp

1578. M. K. Pandey, R. K. Dubey, D. N. Tripathi
Charge transfer in keV proton collision with atomic oxygen: Differential and total cross sections.
Eur. Phys. J. D 45, 273 (2007)

H^+ + O	Charge Transfer	0.5−200 keV	Th
H^+ + O	Total Scattering	0.5−200 keV	Th

1579. C. Xu, D. Xie, P. Honvault, S. Y. Lin, H. Guo
Rate constant for $OH(^2\Pi)$ + $O(^3P)$ -¿ $H(^2S)$ + $O_2(^3\Sigma_g{}^-)$ reaction on an improved ab initio potential energy surface and implications for the interstellar oxygen problem.
J. Chem. Phys. 127, 024304 (2007)

OH + O	Interchange reaction	0.0−0.8 eV	Th

1580. J. Klos, F. J. Aoiz, J. E. Verdasco, M. Brouard, S. Marinakis, S. Stolte
Fully quantum state-resolved inelastic scattering between He and $NO(X^2\Pi)$.
J. Chem. Phys. 127, 031102 (2007)

He + NO	Excitation	0.1 eV	Th

1581. J. Ree, Y. H. Kim, H. K. Shin
Classical trajectory study of the formation of XeH^+ and $XeCl^+$ in the Xe^+ + HCl collision.
J. Chem. Phys. 127, 054304 (2007)

Xe^+ + HCl	Interchange reaction	2.0−20.0 eV	Th

1582. M. Hankel, S. C. Smith, A.J.H.M. Meijer
State-to-state reaction probabilities for the H + $O_2(v,j)$ -¿ O + OH(v',j') reaction on three potential energy surfaces.
J. Chem. Phys. 127, 064316 (2007)

H + O_2	Interchange reaction	0.8−1.8 eV	Th

1583. M. T. Cvitas, P. Soldan, J. M. Hutson, P. Honvault, J.-M. Launay
Interactions and dynamics in Li + Li_2 ultracold collisions.
J. Chem. Phys. 127, 074302 (2007)

Li + Li_2	Excitation	0.0−1.0 K	Th

1584. L. Tao, M. H. Alexander
Role of van der Waals resonances in the vibrational relaxation of HF by collisions with H atoms.
J. Chem. Phys. 127, 114301 (2007)

HF + H	De-excitation	0.00−0.03 eV	Th
HF + H	Interchange reaction	0.00−0.03 eV	Th

1585. A. N. Panda, F. Otto, F. Gatti, H.-D. Meyer
Rovibrational energy transfer in $ortho - H_2$ + $para - H_2$ collisions.
J. Chem. Phys. 127, 114310 (2007)

H_2 + H_2	Energy Transfer	0.1−1.0 eV	Th
H_2 + H_2	Excitation	0.1−1.0 eV	Th

1586. A. M. Zolot, D. J. Nesbitt
Quantum state resolved scattering dynamics of F + HCl -¿ HF(v,J) + Cl.
J. Chem. Phys. 127, 114319 (2007)

F + HCl	Interchange reaction	4.3 kcal/mol	Exp

1587. K. Koszinowski, N. T. Goldberg, J. Zhang, R. N. Zare, F. Bouakline, S. C. Althorpe
Differential cross section for the H + D_2 -¿ HD(v'=1,j'=2,6,10) + D reaction as a function of collision energy.
J. Chem. Phys. 127, 124315 (2007)

H + H_2	Interchange reaction	1.48−1.94 eV	Exp
H + D_2	Interchange reaction	1.48−1.94 eV	Exp
H + H_2	Total Scattering	1.48−1.94 eV	Exp
H + D_2	Total Scattering	1.48−1.94 eV	Exp

1588. D. Wang, W. M. Huo
An eight-degree-of-freedom, time-dependent quantum dynamics study for the H_2 + C_2H reaction on a new modified potential energy surface.
J. Chem. Phys. 127, 154304 (2007)

H_2 + C_2H	Interchange reaction	0.0−0.6 eV	Th

1589. X. Tang, C. Houchins, K.-C. Lau, C. Y. Ng, R. A. Dressler, Y.-H. Chiu, T.-S. Chu, K.-L. Han
A time-dependent wave packet quantum scattering study of the reaction HD^+ (v=0-3; j_0=1) + He -¿ HeH^+ (HeD^+) + D(H).
J. Chem. Phys. 127, 164318 (2007)

$H_2{}^+$ + He	Interchange reaction	0.0−2.0 eV	Th
HD^+ + He	Interchange reaction	0.0−2.0 eV	Th

1590. G. Li, H.-J. Werner, F. Lique, M. H. Alexander
New ab initio potential energy surfaces for the F + H_2 reaction.
J. Chem. Phys. 127, 174302 (2007)

F + H_2	Interchange reaction	0.0−2.5 kcal/mol	Th
F + H_2	Interaction Potentials	0.0−2.5 kcal/mol	Th

1591. M. Yang, J. C. Corchado
Seven dimensional quantum dynamics study of the H_2 + NH_2 -¿ H + NH_3 reaction.
J. Chem. Phys. 127, 184308 (2007)

H_2 + NH_2	Interchange reaction	200−2000 K	Th

1592. P. Defazio, C. Petrongolo
Coriolis coupling effects on the initial-state-resolved dynamics of the $N(^2D)$ + H_2 -¿ NH + H reaction.
J. Chem. Phys. 127, 204311 (2007)

N + H_2	Interchange reaction	0.0−1.0 eV	Th

1593. S. Amaran, S. Kumar
Vibrational inelastic and charge transfer processes in H^+ + H_2 system: An ab initio study.
J. Chem. Phys. 127, 214304 (2007)

H^+ + H_2	Charge Transfer	20 eV	Th
H^+ + H_2	Energy Transfer	20 eV	Th

1594. L. Zhang, Y. Lu, S.-Y. Lee, D. H. Zhang
A transition state wave packet study of the H + CH_4 reaction.
J. Chem. Phys. 127, 234313 (2007)

H + CH_4	Interchange reaction	250−500 K	Th

1595. B. J. Rao, S. Mahapatra
Quantum wave packet dynamics of $N(^2D)$ + H_2 reaction.
J. Chem. Phys. 127, 244307 (2007)

N + H_2	Interchange reaction	0.0−1.0 eV	Th

1596. S. Y. Lin, H. Guo, P. Honvault, C. Xu, D. Xie
Accurate quantum mechanical calculations of differential and integral cross sections and rate constant for the O + OH reaction using an ab initio potential energy surface.
J. Chem. Phys. 128, 014303 (2007)

O + OH	Interchange reaction	0.75 eV	Th
O + OH	Interaction Potentials	0.75 eV	Th
O + OH	Total Scattering	0.75 eV	Th

1597. E. Carmona-Novillo, T. Gonzalez-Lezana, O. Roncero, P. Honvault, J.-M. Launay, N. Bulut, F. J. Aoiz, L. Banares, A. Trottier, E. Wrede
On the dynamics of the H^+ + D_2(v=0, j=0) -¿ HD + D^+ reaction: A comparison between theory and experiment.
J. Chem. Phys. 128, 014304 (2007)

H^+ + H_2	Interchange reaction	0.1−0.5 eV	Th
H^+ + D_2	Interchange reaction	0.1−0.5 eV	Th

1598. H. Yang, K.-L. Han, S. Nanbu, H. Nakamura, G. G. Balint-Kurti, H. Zhang, S. C. Smith, M. Hankel
Quantum dynamical study of the $O(^1D)$ + HCl reaction employing three electronic state potential energy surfaces.
J. Chem. Phys. 128, 014308 (2007)

O + HCl	Interchange reaction	0.0−1.0 eV	Th

1599. S. Amaran, S. Kumar
Elastic/inelastic and charge transfer collisions of H^+ + H_2 at collision energies of 4.67, 6, 7.3, and 10 eV.
J. Chem. Phys. 128, 064301 (2008)

H^+ + H_2	Elastic Scattering	4.7−10.0 eV	Th
H^+ + H_2	Charge Transfer	4.7−10.0 eV	Th
H^+ + H_2	Energy Transfer	4.7−10.0 eV	Th

1600. F. Otto, F. Gatti, H.-D. Meyer
Rotational excitations in $para - H_2$ + $para - H_2$ collisions: Full- and reduced-dimensional quantum wave packet studies comparing different potential energy surfaces.
J. Chem. Phys. 128, 064305 (2008)

H_2 + H_2	Excitation	0−1.2 eV	Th

1601. F. Lique, M. H. Alexander, G. Li, H.-J. Werner, S. A. Nizkorodov, W. W. Harper, D. J. Nesbitt
Evidence for excited spin-orbit state reaction dynamics in F + H_2: Theory and experiment.
J. Chem. Phys. 128, 084313 (2008)

F + H_2	Interchange reaction	0.0−2.5 kcal/mol	Th

1602. S. Amaran, S. Kumar
Quantum dynamics of inelastic excitations and charge transfer processes in the H^+ + NO collisions.
J. Chem. Phys. 128, 124306 (2008)

H^+ + NO	Charge Transfer	9.5−29.03 eV	Th
H^+ + NO	Excitation	9.5−29.03 eV	Th

1603. A. D. Isaacson
Including anharmonicity in the calculation of rate constants. II. The OH + H_2 -¿ H_2O + H reaction.
J. Chem. Phys. 128, 134304 (2008)

OH + H_2	Interchange reaction	200−2400 K	Th

1604. J. Mayneris, R. Martinez, J. Hernando, S. K. Gray, M. Gonzalez
Quantum dynamics study of the K + HF (v = 0-2, j = 0) -¿ KF + H reaction and comparison with quasiclassical trajectory results.
J. Chem. Phys. 128, 144302 (2008)

K + HF	Interchange reaction	0.8−2.2 eV	Th

1605. S. Amaran, S. Kumar
Ab initio potential energy surfaces and nonadiabatic collision dynamics in H^+ + O_2 system.
J. Chem. Phys. 128, 154325 (2008)

H^+ + O_2	Interaction Potentials	9.5 eV	Th
H^+ + O_2	Excitation	9.5 eV	Th

1606. J. P. Layfield, M. D. Owens, D. Troya
Theoretical study of the dynamics of the H + CH_4 and H + C_2H_6 reactions using a specific-reaction-parameter semiempirical Hamiltonian.
J. Chem. Phys. 128, 194302 (2008)

H + CH_4	Interchange reaction	0.0−2.5 eV	Th
H + CD_4	Interchange reaction	0.0−2.5 eV	Th
H + C_2H_6	Interchange reaction	0.0−2.5 eV	Th
H + C_2D_6	Interchange reaction	0.0−2.5 eV	Th

1607. J. Mayneris, J. D. Sierra, M. Gonzalez
Time dependent quantum dynamics study of the Ne + $H_2{}^+$ (v = 0-4) -¿ NeH^+ + H proton transfer reaction.
J. Chem. Phys. 128, 194307 (2008)

Ne + $H_2{}^+$	Interchange reaction	1.0 eV	Th

1608. A. Zanchet, P. Halvick, B. Bussery-Honvault, P. Honvault
Differential cross sections and product energy distributions for the $C(^3P)$ + $OH(X^2\Pi)$ -¿ $CO(X^1\Sigma^+)$ + $H(^2S)$ reaction using a quasiclassical trajectory method.
J. Chem. Phys. 128, 204301 (2008)

C + OH	Interchange reaction	0.001−1.0 eV	Th

1609. J. Troe, V. G. Ushakov
Quantum capture, adiabatic channel, and classical trajectory study of the high pressure rate constant of the reaction H + O_2 -¿ HO_2 between 0 and 5000 K.
J. Chem. Phys. 128, 204307 (2008)

H + O_2	Interchange reaction	0.0−5000 eV	Th

1610. G. Tejeda, F. Thibault, J. M. Fernandez, S. Montero
Low-temperature inelastic collisions between hydrogen molecules and helium atoms.
J. Chem. Phys. 128, 224308 (2008)

He + H_2	Excitation	0−300 K	E/T

1611. S.-G. Zhou, D. Xie, S. Y. Lin, H. Guo
A new ab initio potential-energy surface for $NH_2(X^2A'')$ and quantum studies of NH_2 vibrational spectrum and rate constant for the $N(^2D)$ + H_2 -¿ NH + H reaction.
J. Chem. Phys. 128, 224316 (2008)

N + H_2	Interchange reaction	0−600 K	Th

1612. P. Bargueno, T. Gonzalez-Lezana, P. Larregaray, L. Bonnet, J.-C. Rayez, M. Hankel, S. C. Smith, A.J.H.M. Meijer
Study of the H + O_2 reaction by means of quantum mechanical and statistical approaches: The dynamics on two different potential energy surfaces.
J. Chem. Phys. 128, 244308 (2008)

H + O_2	Interchange reaction	0−1.5 eV	Th

1613. B. Fu, X. Xu, D. H. Zhang
A hierarchical construction scheme for accurate potential energy surface generation: An application to the F + H_2 reaction.
J. Chem. Phys. 129, 011103 (2008)

F + H_2	Interchange reaction	0−0.8 kcal/mol	Th
F + HD	Interchange reaction	0−0.8 kcal/mol	Th
F + H_2	Interaction Potentials	0−0.8 kcal/mol	Th
F + HD	Interaction Potentials	0−0.8 kcal/mol	Th

1614. F. J. Aoiz, V. J. Herrero, V. Saez Rabanos
Cumulative reaction probabilities and transition state properties: A study of the F + H_2 reaction and its deuterated isotopic variants.
J. Chem. Phys. 129, 024305 (2008)

F + H_2	Interchange reaction	0.0−1.0 eV	Th
F + D_2	Interchange reaction	0.0−1.0 eV	Th

1615. D. De Fazio, V. Aquilanti, S. Cavalli, A. Aguilar, J. M. Lucas
Exact state-to-state quantum dynamics of the F + HD -¿ HF(v' = 2) + D reaction on model potential energy surfaces.
J. Chem. Phys. 129, 064303 (2008)

F + H_2	Interchange reaction	0.0−1.2 kcal/mol	Th
F + HD	Interchange reaction	0.0−1.2 kcal/mol	Th

1616. J. A. Klos, F. Lique, M. H. Alexander, P. J. Dagdigian
Theoretical determination of rate constants for vibrational relaxation and reaction of $OH(X^2\Pi$, v = 1) with $O(^3P)$ atoms.
J. Chem. Phys. 129, 064306 (2008)

OH + O	Interchange reaction	0−350 K	Th

1617. M. Yang
Full dimensional time-dependent quantum dynamics study of the H + NH_3 -¿ H_2 + NH_2 reaction.
J. Chem. Phys. 129, 064315 (2008)

H + NH_3	Interchange reaction	0−1.25 eV	Th

1618. M. Wang, X. Sun, W. Bian
Quasiclassical trajectory study of the SiH_4 + H -¿ SiH_3 + H_2 reaction on a global ab initio potential energy surface.
J. Chem. Phys. 129, 084309 (2008)

SiH_4 + H	Interchange reaction	300−1600 K	Th
SiH_4 + H	Interaction Potentials	300−1600 K	Th

1619. F. J. Aoiz, T. Gonzalez-Lezana, V. Saez Rabanos
A comparison of quantum and quasiclassical statistical models for reactions of electronically excited atoms with molecular hydrogen.
J. Chem. Phys. 129, 094305 (2008)

C + H_2	Interchange reaction	150 MeV	Th
C^* + H_2	Interchange reaction	150 MeV	Th
N + H_2	Interchange reaction	150 MeV	Th
N^* + H_2	Interchange reaction	150 MeV	Th
O + H_2	Interchange reaction	150 MeV	Th
O^* + H_2	Interchange reaction	150 MeV	Th
S + H_2	Interchange reaction	150 MeV	Th
S^* + H_2	Interchange reaction	150 MeV	Th

1620. S. Y. Lin, H. Guo
Energy dependence of differential and integral cross sections for $O(^1D)$ + H_2 (υ_i = 0, j_i = 0) -¿ OH (υ_f, j_f) + H reaction.
J. Chem. Phys. 129, 124311 (2008)

O + H_2	Interchange reaction	0.0−0.15 eV	Th
O + H_2	Total Scattering	0.0−0.15 eV	Th

1621. A. Surzhykov, U. D. Jentschura, T. Stoehlker, S. Fritzsche
Electron capture into few-electron heavy ions: Independent particle model.
Eur. Phys. J. D 46, 27 (2008)

H^+ + H Z= 63-92	Charge Transfer	0−600 MeV/u	Th
H^+ + He Z= 63-92	Charge Transfer	0−600 MeV/u	Th
H^+ + Li Z= 63-92	Charge Transfer	0−600 MeV/u	Th

1622. J.A.S. Barata
Integral and differential elastic collision cross-sections for low-energy Ar^+ ions with neutral Ar atoms.
Nucl. Instrum. Methods Phys. Res. A 580, 14 (2007)

Ar^+ + Ar	Elastic Scattering	10^{-3}-10 eV	Th
Ar^+ + Ar	Total Scattering	10^{-3}-10 eV	Th

1623. E. Gargioni, B. Grosswendt
Influence of ionization cross-section data on the Monte Carlo calculation of nanodosimetric quantities.
Nucl. Instrum. Methods Phys. Res. A 580, 81 (2007)

H^+ + N_2	Ionization	0.1−10 MeV	Th

1624. P. C. Chaves, M. A. Reis, N. P. Barradas, M. Kavcic
Dependence of relative intensity of L1 sub-shell X-rays on ion beam energy.
Nucl. Instrum. Methods Phys. Res. B 261, 121 (2007)

H^+ + W	Excitation	0.4−2.0 MeV	Exp
H^+ + W	Ionization	0.4−2.0 MeV	Exp

1625. C. C. Havener, E. Galutschek, R. Rejoub, D. G. Seely
Ion-atom merged-beams measurements.
Nucl. Instrum. Methods Phys. Res. B 261, 129 (2007)

C^{4+} + H	Charge Transfer	10^{-2}-10^3 eV/u	Exp
C^{4+} + D	Charge Transfer	10^{-2}-10^3 eV/u	Exp
N^{2+} + H	Charge Transfer	10^{-2}-10^3 eV/u	Exp
N^{2+} + D	Charge Transfer	10^{-2}-10^3 eV/u	Exp
N^{4+} + H	Charge Transfer	10^{-2}-10^3 eV/u	Exp
N^{4+} + D	Charge Transfer	10^{-2}-10^3 eV/u	Exp
Ne^{4+} + H	Charge Transfer	10^{-2}-10^3 eV/u	Exp
Ne^{4+} + D	Charge Transfer	10^{-2}-10^3 eV/u	Exp
Si^{4+} + H	Charge Transfer	10^{-2}-10^3 eV/u	Exp
Si^{4+} + D	Charge Transfer	10^{-2}-10^3 eV/u	Exp

1626. S. J. Cipolla
The united atom approximation option in the ISICS program to calculate K-, L- and M-shell cross sections from PWBA and ECPSSR theory.
Nucl. Instrum. Methods Phys. Res. B 261, 142 (2007)

He^{2+} + Zr	Ionization	0−6000 keV	Th
He^{2+} + Dy	Ionization	0−6000 keV	Th
He^{2+} + U	Ionization	0−6000 keV	Th

1627. S. J. Cipolla
L X-ray intensity ratios for proton impact on selected rare-earth elements.
Nucl. Instrum. Methods Phys. Res. B 261, 153 (2007)

H^{+} + Gd	Excitation	75−300 keV	Exp
H^{+} + Tb	Excitation	75−300 keV	Exp
H^{+} + Dy	Excitation	75−300 keV	Exp
H^{+} + Ho	Excitation	75−300 keV	Exp
H^{+} + Er	Excitation	75−300 keV	Exp
H^{+} + Tm	Excitation	75−300 keV	Exp
H^{+} + Yb	Excitation	75−300 keV	Exp
H^{+} + Gd	Ionization	75−300 keV	Exp
H^{+} + Tb	Ionization	75−300 keV	Exp
H^{+} + Dy	Ionization	75−300 keV	Exp
H^{+} + Ho	Ionization	75−300 keV	Exp
H^{+} + Er	Ionization	75−300 keV	Exp
H^{+} + Tm	Ionization	75−300 keV	Exp
H^{+} + Yb	Ionization	75−300 keV	Exp

1628. R. D. Rivarola
Coherent electron emission from molecular targets.
Nucl. Instrum. Methods Phys. Res. B 261, 161 (2007)

Kr^{34+} + H_2	Ionization	60 MeV; 2.4 keV; 0−20 a.u.	Th

1629. C. J. Verzani, K. Miller, A. Wrigley, Q. Kessel, W. W. Smith, S. J. Smith, S. Hossain, A. Chutjian
Laboratory measurements of 50-300 eV X rays from collisions of cometary interest: Ne and S L X rays, Fe M X rays and others.
Nucl. Instrum. Methods Phys. Res. B 261, 189 (2007)

Ne^{6+} + CO	Excitation	50−300 eV	Exp
Ne^{7+} + CO	Excitation	50−300 eV	Exp
Ne^{8+} + CO	Excitation	50−300 eV	Exp
S^{9+} + CO	Excitation	50−300 eV	Exp

1630. A.C.F. Santos, W. S. Melo, M. M. Sant'Anna, G. M. Sigaud, E. C. Montenegro
Fragmentation and mean kinetic energy release of the nitrogen molecule.
Nucl. Instrum. Methods Phys. Res. B 261, 200 (2007)

He^{+} + N_2	Dissociation	0.19−0.87 MeV/amu	Exp
He^{+} + N_2	Ionization	0.19−0.87 MeV/amu	Exp

1631. A. L. Godunov, M. Kampp, B. Sulik, H.R.J. Walters, C. T. Whelan
On the extension of (e,2e) theory to coincidence studies of ion-atom collisions.
Nucl. Instrum. Methods Phys. Res. B 261, 222 (2007)

H^{+} + He	Charge Transfer	0.5 MeV	Th
H^{+} + He	Ionization	0.5 MeV	Th

1632. J. A. Tanis, S. Hossain
Electron interferences in the ionization of H_2.
Nucl. Instrum. Methods Phys. Res. B 261, 226 (2007)

$H^{+} + H_2$	Ionization	1−60 MeV/u	Exp
$Kr^{34+} + H_2$	Ionization	1−60 MeV/u	Exp

1633. C. R. Vane, H. F. Krause
Atomic collisions at ultrarelativistic energies.
Nucl. Instrum. Methods Phys. Res. B 261, 244 (2007)

$Pb^{81+} + Be$	Charge Transfer	160 GeV/amu	Exp
$Pb^{81+} + N$	Charge Transfer	160 GeV/amu	Exp
$Pb^{81+} + Al$	Charge Transfer	160 GeV/amu	Exp
$Pb^{81+} + Ar$	Charge Transfer	160 GeV/amu	Exp
$Pb^{81+} + Cu$	Charge Transfer	160 GeV/amu	Exp
$Pb^{81+} + Kr$	Charge Transfer	160 GeV/amu	Exp
$Pb^{81+} + Sn$	Charge Transfer	160 GeV/amu	Exp
$Pb^{81+} + Xe$	Charge Transfer	160 GeV/amu	Exp
$Pb^{81+} + Au$	Charge Transfer	160 GeV/amu	Exp
$Pb^{82+} + Be$	Charge Transfer	160 GeV/amu	Exp
$Pb^{82+} + N$	Charge Transfer	160 GeV/amu	Exp
$Pb^{82+} + Al$	Charge Transfer	160 GeV/amu	Exp
$Pb^{82+} + Ar$	Charge Transfer	160 GeV/amu	Exp
$Pb^{82+} + Cu$	Charge Transfer	160 GeV/amu	Exp
$Pb^{82+} + Kr$	Charge Transfer	160 GeV/amu	Exp
$Pb^{82+} + Sn$	Charge Transfer	160 GeV/amu	Exp
$Pb^{82+} + Xe$	Charge Transfer	160 GeV/amu	Exp
$Pb^{82+} + Au$	Charge Transfer	160 GeV/amu	Exp
$Pb^{81+} + Be$	Ionization	160 GeV/amu	Exp
$Pb^{81+} + N$	Ionization	160 GeV/amu	Exp
$Pb^{81+} + Al$	Ionization	160 GeV/amu	Exp
$Pb^{81+} + Ar$	Ionization	160 GeV/amu	Exp
$Pb^{81+} + Cu$	Ionization	160 GeV/amu	Exp
$Pb^{81+} + Kr$	Ionization	160 GeV/amu	Exp
$Pb^{81+} + Sn$	Ionization	160 GeV/amu	Exp
$Pb^{81+} + Xe$	Ionization	160 GeV/amu	Exp
$Pb^{81+} + Au$	Ionization	160 GeV/amu	Exp
$Pb^{82+} + Be$	Ionization	160 GeV/amu	Exp
$Pb^{82+} + N$	Ionization	160 GeV/amu	Exp
$Pb^{82+} + Al$	Ionization	160 GeV/amu	Exp
$Pb^{82+} + Ar$	Ionization	160 GeV/amu	Exp
$Pb^{82+} + Cu$	Ionization	160 GeV/amu	Exp
$Pb^{82+} + Kr$	Ionization	160 GeV/amu	Exp
$Pb^{82+} + Sn$	Ionization	160 GeV/amu	Exp
$Pb^{82+} + Xe$	Ionization	160 GeV/amu	Exp
$Pb^{82+} + Au$	Ionization	160 GeV/amu	Exp

1634. A. F. Gurbich
Evaluation of non-Rutherford cross sections for IBA: Theory and results.
Nucl. Instrum. Methods Phys. Res. B 261, 401 (2007)

$He^{2+} + O$	Elastic Scattering		Th
$He^{2+} + O$	Total Scattering		Th

1635. D. J. DeSimone, C. Haertling, J. R. Tesmer, Y. Q. Wang
Measurement of the D(p,p)D cross section at laboratory backward angles of 151 degrees and 167 degrees.
Nucl. Instrum. Methods Phys. Res. B 261, 405 (2007)

$H^{+} + H$	Elastic Scattering	1.9−3.0 MeV	Exp

$H^+ + D$	Elastic Scattering	1.9–3.0 MeV	Exp
$H^+ + H$	Total Scattering	1.9–3.0 MeV	Exp
$H^+ + D$	Total Scattering	1.9–3.0 MeV	Exp

1636. Z. Siketic, I. Bogdanovic Radovic, N. Skukan, M. Jaksic, A. R. Lopes Ramos
Proton elastic scattering from aluminum for 120 degrees, 150 degrees and 165 degrees in the energy interval from 2.4 to 5 MeV.
Nucl. Instrum. Methods Phys. Res. B 261, 414 (2007)

$H^+ + Al$	Elastic Scattering	2.4–5.0 MeV	E/T
$H^+ + Al$	Total Scattering	2.4–5.0 MeV	E/T

1637. A. Schuller, H. Winter
Interatomic potentials between noble gas and Ag atoms from axial surface channeling.
Nucl. Instrum. Methods Phys. Res. B 261, 578 (2007)

He + Ag	Elastic Scattering	5–25 keV	Exp
Ne + Ag	Elastic Scattering	5–25 keV	Exp
Ar + Ag	Elastic Scattering	5–25 keV	Exp
He + Ag	Interaction Potentials	5–25 keV	Exp
Ne + Ag	Interaction Potentials	5–25 keV	Exp
Ar + Ag	Interaction Potentials	5–25 keV	Exp

1638. M. A. Bernal, J. A. Liendo
Inelastic-collision cross sections for the interactions of totally stripped H, He and C ions with liquid water.
Nucl. Instrum. Methods Phys. Res. B 262, 1 (2007)

$H^+ + H_2O$	Ionization	0.3–10 MeV/amu	Th
$He^{2+} + H_2O$	Ionization	0.3–10 MeV/amu	Th
$C^{6+} + H_2O$	Ionization	0.3–10 MeV/amu	Th

1639. L. Chen, X. Chen
One and two electron transitions in multiply charged ions and helium collisions.
Nucl. Instrum. Methods Phys. Res. B 262, 33 (2007)

$H^+ + He$	Charge Transfer		Th
$He^+ + He$	Charge Transfer		Th
$He^{2+} + He$	Charge Transfer		Th
$Li^{3+} + He$	Charge Transfer		Th
$C^{2+} + He$	Charge Transfer		Th
$C^{3+} + He$	Charge Transfer		Th
$N^{2+} + He$	Charge Transfer		Th
$O^{5+} + He$	Charge Transfer		Th
$H^+ + He$	Ionization		Th
$He^+ + He$	Ionization		Th
$He^{2+} + He$	Ionization		Th
$Li^{3+} + He$	Ionization		Th
$C^{2+} + He$	Ionization		Th
$C^{3+} + He$	Ionization		Th
$N^{2+} + He$	Ionization		Th
$O^{5+} + He$	Ionization		Th

1640. X. M. Chen, Y. X. Lu, Z. M. Gao, Y. Cui, Y. W. Liu, J. Du
Pure ionization cross section of helium and ionization mechanism.
Nucl. Instrum. Methods Phys. Res. B 262, 161 (2007)

C^{+} + He	Ionization	0.4−6.4 MeV	E/T
C^{2+} + He	Ionization	0.4−6.4 MeV	E/T
C^{3+} + He	Ionization	0.4−6.4 MeV	E/T
C^{4+} + He	Ionization	0.4−6.4 MeV	E/T
O^{+} + He	Ionization	0.4−6.4 MeV	E/T
O^{2+} + He	Ionization	0.4−6.4 MeV	E/T
O^{3+} + He	Ionization	0.4−6.4 MeV	E/T
O^{4+} + He	Ionization	0.4−6.4 MeV	E/T

1641. R. Meharchand, H. Akimune, A. M. van den Berg, Y. Fujita, W. Fujiwara, S. Gales, M. N. Harakeh, H. Hashimoto, R. Hayami, G. W. Hitt, M. Itoh, T. Kawabata, K. Kawase, M. Kinoshita, K. Nakanishi, S. Nakayama, S. Okumura, Y. Shimbara, M. Uchida, T. Yamagata, M. Yosoi, R.G.T. Zegers
Atomic charge-exchange between semi-relativistic (v/c = 0.49) helium ions and targets from carbon to lead.
Nucl. Instrum. Methods Phys. Res. B 264, 221 (2007)

He^{+} + C	Charge Transfer	420 MeV	Exp
He^{+} + Mg	Charge Transfer	420 MeV	Exp
He^{+} + Ni	Charge Transfer	420 MeV	Exp
He^{+} + Zr	Charge Transfer	420 MeV	Exp
He^{+} + Sn	Charge Transfer	420 MeV	Exp
He^{+} + Pb	Charge Transfer	420 MeV	Exp
He^{+} + C	Ionization	420 MeV	Exp
He^{+} + Mg	Ionization	420 MeV	Exp
He^{+} + Ni	Ionization	420 MeV	Exp
He^{+} + Zr	Ionization	420 MeV	Exp
He^{+} + Sn	Ionization	420 MeV	Exp
He^{+} + Pb	Ionization	420 MeV	Exp

1642. A. F. Gurbich, C. Jeynes
Evaluation of non-Rutherford proton elastic scattering cross-section for magnesium.
Nucl. Instrum. Methods Phys. Res. B 265, 447 (2007)

H^{+} + Mg	Elastic Scattering	500−2500 keV	Th
H^{+} + Mg	Total Scattering	500−2500 keV	Th

1643. K. Ohya, K. Inai, A. Nisawa, A. Itoh
Emission statistics of X-ray induced photoelectrons and its comparison with electron- and ion-induced electron emissions.
Nucl. Instrum. Methods Phys. Res. B 266, 541 (2008)

He^{+} + Au	Ionization	1−100 keV	Th

1644. M. F. Ciappina, W. R. Cravero
Fully differential cross sections in single ionization of helium by ion impact: Assessing the role of correlated wave functions.
Nucl. Instrum. Methods Phys. Res. B 266, 555 (2008)

C^{6+} + He	Total Scattering	100 MeV/amu	Th
C^{6+} + He	Ionization	100 MeV/amu	Th

1645. X. J. Xia, W. Ding, B. Zhang, X. G. Long, S. Z. Luo, S. M. Peng, R. Hutton, L. Q. Shi
Cross-section for proton-tritium scattering from 1.4 to 3.4 MeV at the laboratory angle of 165 degrees.
Nucl. Instrum. Methods Phys. Res. B 266, 705 (2008)

H^+ + H	Elastic Scattering	1.4−3.4 MeV	Exp
H^+ + T	Elastic Scattering	1.4−3.4 MeV	Exp
H^+ + H	Total Scattering	1.4−3.4 MeV	Exp
H^+ + T	Total Scattering	1.4−3.4 MeV	Exp

1646. B. W. Ding, D. Y. Yu, X. M. Chen
Cross sections for transfer ionization in ion-helium collisions.
Nucl. Instrum. Methods Phys. Res. B 266, 886 (2008)

He^+ + He	Charge Transfer	10^1-10^4 keV/amu	Th
He^{2+} + He	Charge Transfer	10^1-10^4 keV/amu	Th
Li^+ + He	Charge Transfer	10^1-10^4 keV/amu	Th
Li^{2+} + He	Charge Transfer	10^1-10^4 keV/amu	Th
Li^{3+} + He	Charge Transfer	10^1-10^4 keV/amu	Th
He^+ + He	Ionization	10^1-10^4 keV/amu	Th
He^{2+} + He	Ionization	10^1-10^4 keV/amu	Th
Li^+ + He	Ionization	10^1-10^4 keV/amu	Th
Li^{2+} + He	Ionization	10^1-10^4 keV/amu	Th
Li^{3+} + He	Ionization	10^1-10^4 keV/amu	Th

1647. D. D. Cohen, E. Stelcer, R. Siegele, M. Ionescu, M. Prior
Experimental bremsstrahlung yields for MeV proton bombardment of beryllium and carbon.
Nucl. Instrum. Methods Phys. Res. B 266, 1149 (2008)

H^+ + Be	Heavy Particle Collisions	2−4 MeV	Exp
H^+ + C	Heavy Particle Collisions	2−4 MeV	Exp

1648. A. Gurbich
Evaluation of non-Rutherford proton elastic scattering cross section for nitrogen.
Nucl. Instrum. Methods Phys. Res. B 266, 1193 (2008)

H^+ + N	Elastic Scattering	0.7−3.5 MeV	Th
H^+ + N	Total Scattering	0.7−3.5 MeV	Th

1649. H. Mohan, A. K. Jain
Energy dependence of proton-induced L X-ray production cross-section for W.
Nucl. Instrum. Methods Phys. Res. B 266, 1203 (2008)

H^+ + W	Excitation	260−400 keV	Exp
H^+ + W	Ionization	260−400 keV	Exp

1650. S. Ouziane, A. Amokrane, I. Toumert
Light ion induced L X-ray production cross-sections in Au and Pb.
Nucl. Instrum. Methods Phys. Res. B 266, 1209 (2008)

H^+ + Au	Excitation	1−2.5 MeV	Exp
H^+ + Pb	Excitation	1−2.5 MeV	Exp
H^+ + Au	Ionization	1−2.5 MeV	Exp
H^+ + Pb	Ionization	1−2.5 MeV	Exp

1651. M. Purkait
Electron excitation cross sections of atomic hydrogen by fully stripped projectile ions.
Nucl. Instrum. Methods Phys. Res. B 266, 1957 (2008)

$\mathbf{H^+ + H}$	Excitation	20−1000 keV/amu	Th
$\mathbf{He^{2+} + H}$	Excitation	20−1000 keV/amu	Th
$\mathbf{Li^{3+} + H}$	Excitation	20−1000 keV/amu	Th
$\mathbf{Be^{4+} + H}$	Excitation	20−1000 keV/amu	Th
$\mathbf{B^{5+} + H}$	Excitation	20−1000 keV/amu	Th
$\mathbf{C^{6+} + H}$	Excitation	20−1000 keV/amu	Th
$\mathbf{N^{7+} + H}$	Excitation	20−1000 keV/amu	Th
$\mathbf{O^{8+} + H}$	Excitation	20−1000 keV/amu	Th

1652. I. Fijal-Kirejczyk, M. Jaskola, A. Korman, D. Banas, J. Braziewicz, J. Choinski, U. Majewska, M. Pajek, W. Kretchmer, G. Lapicki, T. Mukoyama, D. Trautmann
L-subshell ionization of heavy elements by S ions with energy of 0.4-3.8 MeV/amu.
Nucl. Instrum. Methods Phys. Res. B 266, 2255 (2008)

$\mathbf{S^+ + Au}$	Ionization	12.8−120 MeV	Exp
$\mathbf{S^+ + Bi}$	Ionization	12.8−120 MeV	Exp

1653. N. Stolterfoht, R. Cabrera-Trujillo, Y. Ohrn, E. Deumens, R. Hoekstra, J. R. Sabin
Strong isotope effects on the charge transfer in slow collisions of He^{2+} with atomic hydrogen, deuterium, and tritium.
Phys. Rev. Lett. 99, 103201 (2007)

$\mathbf{He^{2+} + H}$	Charge Transfer	30−1000 eV/amu	Th
$\mathbf{He^{2+} + D}$	Charge Transfer	30−1000 eV/amu	Th
$\mathbf{He^{2+} + T}$	Charge Transfer	30−1000 eV/amu	Th

1654. M. Nofal, S. Hagmann, Th. Stoehlker, D. H. Jakubassa-Amundsen, Ch. Kozhuharov, X. Wang, A. Gumberidze, U. Spillmann, R. Reuschl, S. Hess, S. Trotsenko, D. Banas, F. Bosch, D. Liesen, R. Moshammer, J. Ullrich, R. Doerner, M. Steck, F. Nolden, P. Beller, H. Rothard, K. Beckert, B. Franczak
Radiative electron capture to the continuum and the short-wavelength limit of electron-nucleus bremsstrahlung in 90 MeV U^{88+} $(1s^2 2s^2)$ + N_2 collisions.
Phys. Rev. Lett. 99, 163201 (2007)

$\mathbf{U^{88+} + N_2}$	Charge Transfer	90 MeV	Exp

1655. H. Brauning, H. Helm, J. S. Briggs, E. Salzborn
Double-electron transfer in $H^- + H^+$ collisions.
Phys. Rev. Lett. 99, 173202 (2007)

$\mathbf{H^- + H^+}$	Charge Transfer	0.5−12 keV	E/T

1656. L. Sarkadi, A. Orban
Triple coincidence experiment to explore the two-electron continuum states of the projectile resulting from mutual ionization in 100-keV He^0 + He collisions.
Phys. Rev. Lett. 100, 133201 (2007)

He + He	Total Scattering	100 keV	Exp
He + He	Ionization	100 keV	Exp

1657. M. F. Ciappina, R. D. Rivarola
Interference pattern signatures in fully differential cross sections for single ionization of H_2 molecules by fast protons.
J. Phys. B 41, 015203 (2008)

$\mathbf{H^+ + H_2}$	Total Scattering	6 MeV	Th
$\mathbf{H^+ + H_2}$	Ionization	6 MeV	Th

1658. G. M. Sigaud
Free-collision model calculations for the electron detachment of anions by noble gases.
J. Phys. B 41, 015205 (2008)

B^- + He	Detachment	0.7−130 keV	Th
B^- + Ar	Detachment	0.7−130 keV	Th
B^+ + Ne	Detachment	0.7−130 keV	Th
O^- + He	Detachment	0.7−130 keV	Th
O^- + Ne	Detachment	0.7−130 keV	Th
O^- + Ar	Detachment	0.7−130 keV	Th
F^- + He	Detachment	0.7−130 keV	Th
F^- + Ne	Detachment	0.7−130 keV	Th
F^- + Ar	Detachment	0.7−130 keV	Th
Al^- + He	Detachment	0.7−130 keV	Th
Al^- + Ne	Detachment	0.7−130 keV	Th
Al^- + Ar	Detachment	0.7−130 keV	Th
S^- + He	Detachment	0.7−130 keV	Th
S^- + Ne	Detachment	0.7−130 keV	Th
S^- + Ar	Detachment	0.7−130 keV	Th
Cl^- + He	Detachment	0.7−130 keV	Th
Cl^- + Ne	Detachment	0.7−130 keV	Th
Cl^- + Ar	Detachment	0.7−130 keV	Th

1659. T.J.M. Zouros, B. Sulik, L. Gulyas, K. Tokesi
Selective enhancement of 1s2s2p ^4P_J metastable states populated by cascades in single-electron transfer collisions of F^{7+} $(1s^2/1s2s\ ^3S)$ ions with He and H_2 targets.
Phys. Rev. A 77, 050701 (2008)

F^{7+} + He	Charge Transfer	0.2−2 MeV/u	E/T
F^{7+} + H_2	Charge Transfer	0.2−2 MeV/u	E/T

1660. P.M.Y. Garcia, G. M. Sigaud, H. Luna, A.C.F. Santos, E. C. Montenegro, M. B. Shah
Water-molecule dissociation by impact of He^+ ions.
Phys. Rev. A 77, 052708 (2008)

He^+ + H_2O	Dissociation	0.5−2 MeV	Exp
He^+ + H_2O	Charge Transfer	0.5−2 MeV	Exp
He^+ + H_2O	Ionization	0.5−2 MeV	Exp

1661. A. Luehr, A. Saenz
Antiproton and proton collisions with the alkali-metal atoms Li, Na, and K.
Phys. Rev. A 77, 052713 (2008)

H^+ + Li	Excitation	10^0-10^3 keV	E/T
H^+ + Na	Excitation	10^0-10^3 keV	E/T
H^+ + K	Excitation	10^0-10^3 keV	E/T
H^+ + Li	Ionization	10^0-10^3 keV	E/T
H^+ + Na	Ionization	10^0-10^3 keV	E/T
H^+ + K	Ionization	10^0-10^3 keV	E/T

1662. R. C. Fandanelli, J. F. Dias, M. Behar
Coulomb heating of channeled C^+ and ${C_2}^+$ molecules in Si.
Phys. Rev. A 77, 052901 (2008)

C^+ + Si	Recombination	900−2200 keV/atom	E/T
${C_2}^+$ + Si	Recombination	900−2200 keV/atom	E/T

1663. M. Kajita
Prospects of detecting m_3/m_p variance using vibrational transition frequencies of $^2\Sigma - state$ molecules.
Phys. Rev. A 77, 012511 (2008)

NH + NH	De-excitation	10^{-6}-0.5 K	Th
CaH + CaH	De-excitation	10^{-6}-0.5 K	Th
MgH + MgH	De-excitation	10^{-6}-0.5 K	Th
NH + NH	Elastic Scattering	10^{-6}-0.5 K	Th
CaH + CaH	Elastic Scattering	10^{-6}-0.5 K	Th
MgH + MgH	Elastic Scattering	10^{-6}-0.5 K	Th

1664. E. Y. Kamber, O. Abu-Haija, J. A. Wardwell
State-selective electron capture by O^{3+} ions from atomic and molecular targets.
Phys. Rev. A 77, 012701 (2008)

O^{3+} + **He**	Charge Transfer	0.3−1.2 keV	Exp
O^{3+} + **Ar**	Charge Transfer	0.3−1.2 keV	Exp
O^{3+} + H_2O	Charge Transfer	0.3−1.2 keV	Exp
O^{3+} + D_2	Charge Transfer	0.3−1.2 keV	Exp
O^{3+} + CO_2	Charge Transfer	0.3−1.2 keV	Exp
O^{3+} + O_2	Charge Transfer	0.3−1.2 keV	Exp
O^{3+} + **He**	Interaction Potentials	0.3−1.2 keV	Exp
O^{3+} + **Ar**	Interaction Potentials	0.3−1.2 keV	Exp
O^{3+} + H_2O	Interaction Potentials	0.3−1.2 keV	Exp
O^{3+} + D_2	Interaction Potentials	0.3−1.2 keV	Exp
O^{3+} + CO_2	Interaction Potentials	0.3−1.2 keV	Exp
O^{3+} + O_2	Interaction Potentials	0.3−1.2 keV	Exp

1665. L. F. Errea, F. Guzman, L. Mendez, B. Pons, A. Riera
Ab initio calculation of charge-transfer and excitation cross sections in Li^+ + H(1s) collisions.
Phys. Rev. A 77, 012706 (2008)

H^+ + **Li**	Charge Transfer	25−2500 eV/u	Th
Li^+ + **H**	Charge Transfer	25−2500 eV/u	Th
H^+ + **Li**	Excitation	25−2500 eV/u	Th
Li^+ + **H**	Excitation	25−2500 eV/u	Th

1666. J. Suarez, L. F. Errea, C. Illescas, A. Macias, L. Mendez, B. Pons, I. Rabadan, A. Riera
Asymptotic transitions around conical intersections in ion-diatom collisions.
Phys. Rev. A 77, 012708 (2008)

H^+ + H_2	Charge Transfer	0.0003−62.5 eV/u	Th

1667. M. Kitagawa, K. Enomoto, K. Kasa, Y. Takahashi, R. Ciurylo, P. Naidon, P. S. Julienne
Two-color photoassociation spectroscopy of ytterbium atoms and the precise determinations of s-wave scattering lengths.
Phys. Rev. A 77, 012719 (2008)

Yb + Yb	Excitation	0−1 mK	E/T

1668. M. Zapukhlyak, T. Kirchner, A. Hasan, B. Tooke, M. Schulz
Projectile angular-differential cross sections for transfer and transfer excitation in proton collisions with helium.
Phys. Rev. A 77, 012720 (2008)

H^+ + He	Charge Transfer	5−200 eV	Th
H^+ + He	Total Scattering	5−200 eV	Th
H^+ + He	Excitation	5−200 eV	Th

1669. G. Jalbert, W. Wolff, S. D. Magalhaes, N. V. de Castro Faria
Electron detachment of negative ions: The influence of the outermost electron and its neutral core atom in collision with He, Ne, and Ar.
Phys. Rev. A 77, 012722 (2008)

C^- + He	Detachment	1−81 keV/u	E/T
C^- + Ne	Detachment	1−81 keV/u	E/T
C^- + Ar	Detachment	1−81 keV/u	E/T
O^- + He	Detachment	1−81 keV/u	E/T
O^- + Ne	Detachment	1−81 keV/u	E/T
O^- + Ar	Detachment	1−81 keV/u	E/T
F^- + He	Detachment	1−81 keV/u	E/T
F^- + Ne	Detachment	1−81 keV/u	E/T
F^- + Ar	Detachment	1−81 keV/u	E/T
Na^- + He	Detachment	1−81 keV/u	E/T
Na^- + Ne	Detachment	1−81 keV/u	E/T
Na^- + Ar	Detachment	1−81 keV/u	E/T
Si^- + He	Detachment	1−81 keV/u	E/T
Si^- + Ne	Detachment	1−81 keV/u	E/T
Si^- + Ar	Detachment	1−81 keV/u	E/T
S^- + He	Detachment	1−81 keV/u	E/T
S^- + Ne	Detachment	1−81 keV/u	E/T
S^- + Ar	Detachment	1−81 keV/u	E/T
Cl^- + He	Detachment	1−81 keV/u	E/T
Cl^- + Ne	Detachment	1−81 keV/u	E/T
Cl^- + Ar	Detachment	1−81 keV/u	E/T
Ge^- + He	Detachment	1−81 keV/u	E/T
Ge^- + Ne	Detachment	1−81 keV/u	E/T
Ge^- + Ar	Detachment	1−81 keV/u	E/T

1670. M. S. Pindzola, D. R. Schultz
Time-dependent lattice methods for ion-atom collisions in Cartesian and cylindrical coordinate systems.
Phys. Rev. A 77, 014701 (2008)

H^+ + H	Excitation	40 keV	Th

1671. J. Rajput, C. P. Safvan
Projectile charge-state dependence of methane fragmentation.
Phys. Rev. A 77, 014702 (2008)

Ar^+ + CH_4	Dissociation	4.4 keV/u	Exp
Ar^{2+} + CH_4	Dissociation	4.4 keV/u	Exp
Ar^{3+} + CH_4	Dissociation	4.4 keV/u	Exp
Ar^{4+} + CH_4	Dissociation	4.4 keV/u	Exp
Ar^{5+} + CH_4	Dissociation	4.4 keV/u	Exp
Ar^{6+} + CH_4	Dissociation	4.4 keV/u	Exp
Ar^{7+} + CH_4	Dissociation	4.4 keV/u	Exp

1672. J. X. Shao, X. M. Chen, Z. Y. Liu, R. Qi, X. R. Zou
Multi-ionization of helium by slow highly charged ions.
Phys. Rev. A 77, 042711 (2008)

H^{+} + He	Ionization	1−10 v(a.u.)	E/T
He^{2+} + He	Ionization	1−10 v(a.u.)	E/T
Li^{3+} + He	Ionization	1−10 v(a.u.)	E/T
B^{5+} + He	Ionization	1−10 v(a.u.)	E/T
C^{2+} + He	Ionization	1−10 v(a.u.)	E/T
C^{3+} + He	Ionization	1−10 v(a.u.)	E/T
C^{6+} + He	Ionization	1−10 v(a.u.)	E/T
O^{8+} + He	Ionization	1−10 v(a.u.)	E/T
F^{9+} + He	Ionization	1−10 v(a.u.)	E/T
I^{5+} + He	Ionization	1−10 v(a.u.)	E/T
I^{9+} + He	Ionization	1−10 v(a.u.)	E/T
Au^{6+} + He	Ionization	1−10 v(a.u.)	E/T
Au^{8+} + He	Ionization	1−10 v(a.u.)	E/T

1673. L. Liu, J. G. Wang, R. K. Janev
Dynamics of He^{2+} + H(1s) ionization with screened Coulomb interactions.
Phys. Rev. A 77, 042712 (2008)

He^{2+} + H	Ionization	1−280 keV/u	Th

1674. M. Seliger, C. O. Reinhold, T. Minami, D. R. Schultz, S. Yoshida, J. Burgdorfer, E. Lamour, J. P. Rozet, D. Vernhet
Occupation of fine-structure states in electron capture and transport.
Phys. Rev. A 77, 042713 (2008)

Ar^{17+} + CH_4	Charge Transfer	13.6 MeV/u	E/T
Ar^{17+} + N_2	Charge Transfer	13.6 MeV/u	E/T

1675. B. Najjari, A. Surzhykov, A. B. Voitkiv
Relativistic time dilation and the spectrum of electrons emitted by 33-TeV lead ions penetrating thin foils.
Phys. Rev. A 77, 042714 (2008)

Pb^{81+} + Al	Ionization	33 TeV	Th

1676. S. Bovino, E. Bodo, F. A. Gianturco
Ultralow-energy vibrational quenching in ionic collisions: Isotope effects in Li^{+} + D_2 encounters.
Phys. Rev. A 77, 042716 (2008)

Li^{+} + H_2	De-excitation	10^{-6}-10^{-1} cm^{-1}	Th
Li^{+} + D_2	De-excitation	10^{-6}-10^{-1} cm^{-1}	Th
Li^{+} + H_2	Elastic Scattering	10^{-6}-10^{-1} cm^{-1}	Th
Li^{+} + D_2	Elastic Scattering	10^{-6}-10^{-1} cm^{-1}	Th
Li^{+} + H_2	Excitation	10^{-6}-10^{-1} cm^{-1}	Th
Li^{+} + D_2	Excitation	10^{-6}-10^{-1} cm^{-1}	Th

1677. G. Guillon, T. Stoecklin, A. Voronin
Spin depolarization of N_2^{+} ($^2\Sigma^+$) in collisions with ^3He and ^4He in a magnetic field.
Phys. Rev. A 77, 042718 (2008)

N_2^{+} + He	De-excitation	10^{-8}-10^{0} cm^{-1}	Th

1678. A. Surzhykov, U. D. Jentschura, T. Stoehlker, A. Gumberidze, S. Fritzsche
Alignment of heavy few-electron ions following excitation by relativistic Coulomb collisions.
Phys. Rev. A 77, 042722 (2008)

$H^{+} + U^{89+}$	Excitation	0−600 MeV/u	Th
$H^{+} + U^{90+}$	Excitation	0−600 MeV/u	Th

1679. S. Martin, L. Chen, A. Salmoun, B. Li, J. Bernard, R. Bredy
Fragmentation patterns of multicharged $C_{60}{}^{r+}$ (r = 3-5) studied with well-controlled internal excitation energy.
Phys. Rev. A 77, 043201 (2008)

$F^{2+} + C_{60}$	Dissociation	6.8 keV	Exp
$F^{2+} + C_{60}$	Charge Transfer	6.8 keV	Exp
$F^{2+} + C_{60}$	Ionization	6.8 keV	Exp

1680. M. Ave, M. Bohacova, B. Buonomo, N. Busca, L. Cazon, S. D. Chemerisov, M. E. Conde, R. A. Crowell, P. Di Carlo, C. Di Giulio, M. Doubrava, A. Esposito, P. Facal, F. J. Franchini, J. Hoerandel, M. Hrabovsky, M. Iarlori, T. E. Kasprzyk, B. Keilhauer, H. Klages, M. Kleifges, S. Kuhlmann, G. Mazzitelli, L. Nozka, A. Obermeier, M. Palatka, S. Petrera, P. Privitera, J. Ridky, V. Rizi, G. Rodriguez, F. Salamida, P. Schovanek, H. Spinka, E. Strazzeri, A. Ulrich, Z. M. Yusof, V. Vacek, P. Valente, V. Verzi, T. Waldenmaier
Spectrally resolved pressure dependence measurements of air fluorescence emission with AIRFLY.
Nucl. Instrum. Methods Phys. Res. A 597, 41 (2008)

$N_2 + N_2$	De-excitation	3 MeV; 300 deg K	Exp
$N_2{}^{*} + N_2$	De-excitation	3 MeV; 300 deg K	Exp

1681. M. M. Fraga, A. Onofre, L. Pereira, N. Castro, F. Veloso, F. Fraga, R. F. Marques, M. Pimenta, A. Policarpo
Temperature-dependent quenching of UV fluorescence of N_2.
Nucl. Instrum. Methods Phys. Res. A 597, 75 (2008)

$N_2 + N_2$	De-excitation	4.3 MeV; 250−300 deg K	Exp
$N_2{}^{*} + N_2$	De-excitation	4.3 MeV; 250−300 deg K	Exp
$He^{2+} + N_2$	Fluorescence	4.3 MeV; 250−300 deg K	Exp

1682. A. Morozov, T. Heindl, J. Wieser, R. Kruecken, A. Ulrich
Collisionial population channels of the C $^{3}\Pi_u$ state and their impact on the fluorescence analysis of extensive air showers.
Nucl. Instrum. Methods Phys. Res. A 597, 105 (2008)

$N_2 + H_2O$	De-excitation	10 keV; 300 deg K	Exp
$N_2 + N_2$	De-excitation	10 keV; 300 deg K	Exp
$N_2{}^{*} + H_2O$	De-excitation	10 keV; 300 deg K	Exp
$N_2{}^{*} + N_2$	De-excitation	10 keV; 300 deg K	Exp

1683. M. A. Nelson, L. A. Triplett, J. J. Colman, R. Roussel-Dupre
Comparison of a model for air fluorescence via electron beam excitation with experimental data.
Nucl. Instrum. Methods Phys. Res. A 597, 110 (2008)

$N_2 + N_2$	De-excitation	50 keV; 300 deg K	E/T
$N_2 + O_2$	De-excitation	50 keV; 300 deg K	E/T
$N_2{}^{*} + N_2$	De-excitation	50 keV; 300 deg K	E/T
$N_2{}^{*} + O_2$	De-excitation	50 keV; 300 deg K	E/T

1684. F. Ditroi, S. Takacs, F. Tarkanyi, M. Baba, E. Corniani, Yu. N. Shubin
Study of proton induced reactions on niobium targets up to 70 MeV.
Nucl. Instrum. Methods Phys. Res. B 266, 5087 (2008)

H^+ + Ce	Excitation	3−4 MeV	Exp
H^+ + Nd	Excitation	3−4 MeV	Exp
H^+ + Gd	Excitation	3−4 MeV	Exp
H^+ + Dy	Excitation	3−4 MeV	Exp
H^+ + Ho	Excitation	3−4 MeV	Exp

1685. T.-G. Lee, N. Balakrishnan, R. C. Forrey, P. C. Stancil, G. Shaw, D. R. Schultz, G. J. Ferland
Rotational quenching rate coefficients for H_2 in collisions with H_2 from 2 to 10,000 K.
Astrophys. J., Part 1 689, 1105 (2008)

H_2 + H_2	De-excitation	2−10,000 K	Th
H_2 + H_2	Excitation	2−10,000 K	Th

1686. G. Quemener, N. Balakrishnan, B. K. Kendrick
Quantum dynamics of the O + OH -¿ H + O_2 reaction at low temperatures.
J. Chem. Phys. 129, 224309 (2008)

O + OH	Interchange reaction	100 K	Th

1687. P. Gamallo, P. Defazio, M. Gonzalez, C. Petrongolo
Renner-Teller couled-channel dynamics of the $N(^2D)$ + H_2 reaction and the role of the NH_2 $\tilde{A}^2A_1$ electronic state.
J. Chem. Phys. 129, 244307 (2008)

N + H_2	Interchange reaction	213−300 K	Th

1688. S. Martinez, G. Bernardi, P. Focke, S. Suarez, D. Fregenal
Transfer ionization and total electron emission for 100 keV amu^{-1} He^{2+} colliding on He and H_2.
J. Phys. B 41, 145204 (2008)

He^{2+} + He	Charge Transfer	100 keV	Exp
He^{2+} + H_2	Charge Transfer	100 keV	Exp
He^{2+} + He	Ionization	100 keV	Exp
He^{2+} + H_2	Ionization	100 keV	Exp

1689. S. Matoba, H. Tanuma, K. Ohtsuki
Mobility of the metastable C^+ ion in cooled He gas at 77 and 4.3 K.
J. Phys. B 41, 145205 (2008)

C^+ + He	Elastic Scattering	550−1500 K	Exp

1690. P. Siddons, C. S. Adams, C. Ge, I. G. Hughes
Absolute absorption on rubidium D lines: Comparison between theory and experiment.
J. Phys. B 41, 155004 (2008)

Rb + Rb	Line Broadening	16.5−30 deg C	Th

1691. N. Mabrouk, H. Berriche
Theoretical study of the NaLi molecule: Potential energy curves, spectroscopic constants, dipole moments and radiative lifetimes.
J. Phys. B 41, 155101 (2008)

Na + Li	Interaction Potentials	R=3.25 − 100 a.u.	Th

1692. L. Liu, J. G. Wang
Dynamics of the $H^+ + H^-$ electron capture process in Debye plasmas.
J. Phys. B 41, 155701 (2008)

H^+ + H^-	Charge Transfer	1−100 keV/u	Th

1693. R. Tobola, F. Lique, J. Klos, G. Chalasinski
Ro-vibrational excitation of SiS by He.
J. Phys. B 41, 155702 (2008)

He + SiS	Excitation	300−1500 K	Th

1694. A. D. Ulantsev
Geometrical model: The single and multiple ionization of ions and atoms in ion-atom collisions.
J. Phys. B 41, 165203 (2008)

H + Xe	Ionization	0.1−6.5 MeV/amu	Th
H^+ + Li	Ionization	0.1−6.5 MeV/amu	Th
H^+ + Ar	Ionization	0.1−6.5 MeV/amu	Th
Xe^{18+} + Ar	Ionization	0.1−6.5 MeV/amu	Th
Xe^{18+} + Xe	Ionization	0.1−6.5 MeV/amu	Th
U^{28+} + Ar	Ionization	0.1−6.5 MeV/amu	Th

1695. J.Q.W. Lo, B. D. Shizgal
An efficient mapped pseudospectral method for weakly bound states: Vibrational states of He_2, Ne_2, Ar_2 and Cs_2.
J. Phys. B 41, 185103 (2008)

He + He	Interaction Potentials	2−6 Å	Th
Ne + Ne	Interaction Potentials	2−6 Å	Th
Ar + Ar	Interaction Potentials	2−6 Å	Th
Cs + Cs	Interaction Potentials	2−6 Å	Th

1696. J. M. Monti, R. D. Rivarola, P. D. Fainstein
Quantum interferences in swift highly-charged dressed-ion-atom collisions.
J. Phys. B 41, 201001 (2008)

U^{21+} + He	Ionization	1 MeV	Th

1697. H. Ghalila, S. Lahmar, Z. Ben Lakhdar, M. Hochlaf
Spectroscopy and metastability of BeO^+.
J. Phys. B 41, 205101 (2008)

Be + O	Interaction Potentials		Th
Be + O^+	Interaction Potentials		Th

1698. V. N. Glushkov, J. Kobus, S. Wilson
Distributed Gaussian basis sets: A comparison with finite difference Hartree-Fock calculations for potential energy curves of H_2, LiH and BH.
J. Phys. B 41, 205102 (2008)

H + H	Interaction Potentials		Th
Li + H	Interaction Potentials		Th
B + H	Interaction Potentials		Th

1699. W. S. Melo, A.C.F. Santos, M. M. Sant'Anna, G. M. Sigaud, E. C. Montenegro
Dissociative and non-dissociative ionization of the O_2 molecule by He^+ impact.
J. Phys. B 41, 205201 (2008)

He^+ + O_2	Dissociation	0.75−3.5 MeV	Exp
He^+ + O_2	Ionization	0.75−3.5 MeV	Exp

1700. M. Wan, Y. Zhang, C. Song, T. Gao
Spin-orbit coupling effects in the low-lying states of NH^+ and NH^-.
J. Phys. B 41, 215102 (2008)

H^+ + N	Interaction Potentials	R=0−6 a.u.	Th
N^+ + H	Interaction Potentials	R=0−6 a.u.	Th

1701. D. Vrinceanu, A. Dalgarno
Long-range interaction between ground and excited state hydrogen atoms.
J. Phys. B 41, 215202 (2008)

H + H	Interaction Potentials	R=3−600 a.u.	Th

1702. R. F. Nascimento, L. E. Machado, C. E. Bielschowsky, G. Jalbert
New approach on molecular ionization by ion impact: The CDW-EIS-SVIM model.
J. Phys. B 41, 225201 (2008)

H^+ + H_2	Ionization	0.095−1 MeV/amu	Th
C^{6+} + H_2	Ionization	0.095−1 MeV/amu	Th

1703. P. Barragan, L. F. Errea, L. Mendez, I. Rabadan, A. Riera
State selective electron capture and excitation in proton collisions with Be.
J. Phys. B 41, 225202 (2008)

H^+ + Be	Charge Transfer	$2.5 + 10^{-7}$-16 keV/amu	Th
H^+ + Be	Excitation	$2.5 + 10^{-7}$-16 keV/amu	Th

1704. M. Rey, F. Michelot, Vl. G. Tyuterev
Formalism of the displaced squeezed Fock states for variational calculations of highly excited ro-vibrational levels: Diatomic molecules.
Phys. Rev. A 78, 022511 (2008)

Li + Li	Interaction Potentials		Th
C + O	Interaction Potentials		Th
Ca + Ca	Interaction Potentials		Th

1705. P. S. Zuchowski, J. M. Hutson
Prospects for producing ultracold NH_3 molecules by sympathetic cooling: A survey of interaction potentials.
Phys. Rev. A 78, 022701 (2008)

Li + NH_3	Interaction Potentials		Th
Be + NH_3	Interaction Potentials		Th
Na + NH_3	Interaction Potentials		Th
Mg + NH_3	Interaction Potentials		Th
K + NH_3	Interaction Potentials		Th
Ca + NH_3	Interaction Potentials		Th
Rb + NH_3	Interaction Potentials		Th
Sr + NH_3	Interaction Potentials		Th
Xe + NH_3	Interaction Potentials		Th

1706. A. Banerjee, J. Autschbach, A. Chakrabarti
Time-dependent density-functional-theory calculation of the van der Waals coefficient C_6 of alkali-metal atoms Li, Na, K; alkali-metal dimers Li_2, Na_2, K_2; sodium clusters Na_n; and fullerene C_{60}.
Phys. Rev. A 78, 032704 (2008)

Li + Li	Interaction Potentials		Th
Na + Na	Interaction Potentials		Th
K + K	Interaction Potentials		Th

1707. F. I. Allen, C. Biedermann, R. Radtke, G. Fussmann, S. Fritzsche
Energy dependence of angular momentum capture states in charge exchange collisions between slow highly charged argon ions and argon neutrals.
Phys. Rev. A 78, 032705 (2008)

Ar^{17+} + Ar	Charge Transfer	5−2000 eV/u	Exp
Ar^{18+} + Ar	Charge Transfer	5−2000 eV/u	Exp

1708. M. K. Covo, I. D. Kaganovich, A. Shnidman, A. W. Molvik, J. L. Vujic
Measurements of the total charge-changing cross sections for collisions of target gases with a 1-MeV $K^+ - ion$ beam.
Phys. Rev. A 78, 032709 (2008)

K^+ + He	Charge Transfer	1 MeV/u	Exp
K^+ + Ne	Charge Transfer	1 MeV/u	Exp
K^+ + Ar	Charge Transfer	1 MeV/u	Exp
K^+ + Kr	Charge Transfer	1 MeV/u	Exp
K^+ + Xe	Charge Transfer	1 MeV/u	Exp
K^+ + H_2	Charge Transfer	1 MeV/u	Exp
K^+ + H_2O	Charge Transfer	1 MeV/u	Exp
K^+ + N_2	Charge Transfer	1 MeV/u	Exp
K^+ + He	Ionization	1 MeV/u	Exp
K^+ + Ne	Ionization	1 MeV/u	Exp
K^+ + Ar	Ionization	1 MeV/u	Exp
K^+ + Kr	Ionization	1 MeV/u	Exp
K^+ + Xe	Ionization	1 MeV/u	Exp
K^+ + H_2	Ionization	1 MeV/u	Exp
K^+ + H_2O	Ionization	1 MeV/u	Exp
K^+ + N_2	Ionization	1 MeV/u	Exp

1709. S. B. Bayram, R. Marhatta
Anisotropy-dependent circular polarization spectroscopy.
Phys. Rev. A 78, 033403 (2008)

Cs + Ar	Excitation	0−100 Torr	Exp

1710. M. Masili, R. J. Gentil
High-precision calculation of the dispersion coefficients of ground-state hydrogen using a variationally stable approach.
Phys. Rev. A 78, 034701 (2008)

H + H	Interaction Potentials		Th
H + H_2	Interaction Potentials		Th

1711. M. Viteau, A. Chotia, D. Comparat, D. A. Tate, T. F. Gallagher, P. Pillet
Melting a frozen Rydberg gas with an attractive potential.
Phys. Rev. A 78, 040704 (2008)

Cs + Cs	Energy Transfer	100 μ K	Exp
Cs^* + Cs^*	Energy Transfer	100 μ K	Exp
Cs + Cs	Interaction Potentials	100 μ K	Exp
Cs^* + Cs^*	Interaction Potentials	100 μ K	Exp
Cs + Cs	Ionization	100 μ K	Exp
Cs^* + Cs^*	Ionization	100 μ K	Exp

1712. J. X. Shao, X. M. Chen, X. R. Zou, X. A. Wang, F. J. Lou
Simultaneous ionization of both collision partners in the strong perturbative energy range (20-500 keV/amu).
Phys. Rev. A 78, 042701 (2008)

$\mathbf{He^+ + H}$	Ionization	20−500 keV/amu	Th
$\mathbf{Li^+ + H}$	Ionization	20−500 keV/amu	Th
$\mathbf{Li^{2+} + H}$	Ionization	20−500 keV/amu	Th

1713. C. Dal Cappello, P. A. Hervieux, I. Charpentier, F. Ruiz-Lopez
Ionization of the cytosine molecule by protons: Ab initio calculation of differential and total cross sections.
Phys. Rev. A 78, 042702 (2008)

$\mathbf{H^+ + C_4H_5N_3O}$	Total Scattering	0.1−100 MeV	Th
$\mathbf{H^+ + C_4H_5N_3O}$	Ionization	0.1−100 MeV	Th

1714. S. E. Maxwell, M. T. Hummon, Y. Wang, A. A. Buchachenko, R. V. Krems, J. M. Doyle
Spin-orbit interaction and large inelastic rates in bismuth-helium collisions.
Phys. Rev. A 78, 0427206 (2008)

Bi + He	De-excitation	0.5 K	E/T
Bi + He	Energy Transfer	0.5 K	E/T
Bi + He	Interaction Potentials	0.5 K	E/T

1715. S. Ghosh, A. Dhara, C. R. Mandal, M. Purkait
Double-electron-capture cross sections from helium by fully stripped projectile ions in intermediate-to-high energies.
Phys. Rev. A 78, 042708 (2008)

$\mathbf{He^{2+} + He}$	Charge Transfer	0.2−20 MeV	Th
$\mathbf{Li^{3+} + He}$	Charge Transfer	0.2−20 MeV	Th
$\mathbf{B^{5+} + He}$	Charge Transfer	0.2−20 MeV	Th

1716. B. Roth, D. Offenberg, C. B. Zhang, S. Schiller
Chemical reactions between cold trapped Ba^+ ions and neutral molecules in the gas phase.
Phys. Rev. A 78, 042709 (2008)

$\mathbf{Ba^+ + CO_2}$	Association	300 K	Exp
$\mathbf{Ba^+ + N_2O}$	Association	300 K	Exp
$\mathbf{Ba^+ + O_2}$	Association	300 K	Exp
$\mathbf{BaO^+ + CO}$	Association	300 K	Exp

1717. K. J. Matherson, R. D. Glover, D. E. Laban, R. T. Sang
Measurement of low-energy total absolute atomic collision cross sections with the metastable $^3P_2$ state of neon using a magneto-optical trap.
Phys. Rev. A 78, 042712 (2008)

Ne + He	Association	11−27 meV	Exp
Ne + Ne	Association	11−27 meV	Exp
Ne + Ar	Association	11−27 meV	Exp
$\mathbf{Ne + H_2}$	Association	11−27 meV	Exp
$\mathbf{Ne + N_2}$	Association	11−27 meV	Exp
$\mathbf{Ne + O_2}$	Association	11−27 meV	Exp
$\mathbf{Ne^* + He}$	Association	11−27 meV	Exp
$\mathbf{Ne^* + Ne}$	Association	11−27 meV	Exp

$Ne^* + Ar$	Association	11−27 meV	Exp
$Ne^* + H_2$	Association	11−27 meV	Exp
$Ne^* + N_2$	Association	11−27 meV	Exp
$Ne^* + O_2$	Association	11−27 meV	Exp
Ne + He	Elastic Scattering	11−27 meV	Exp
Ne + Ne	Elastic Scattering	11−27 meV	Exp
Ne + Ar	Elastic Scattering	11−27 meV	Exp
$Ne + H_2$	Elastic Scattering	11−27 meV	Exp
$Ne + N_2$	Elastic Scattering	11−27 meV	Exp
$Ne + O_2$	Elastic Scattering	11−27 meV	Exp
$Ne^* + He$	Elastic Scattering	11−27 meV	Exp
$Ne^* + Ne$	Elastic Scattering	11−27 meV	Exp
$Ne^* + Ar$	Elastic Scattering	11−27 meV	Exp
$Ne^* + H_2$	Elastic Scattering	11−27 meV	Exp
$Ne^* + N_2$	Elastic Scattering	11−27 meV	Exp
$Ne^* + O_2$	Elastic Scattering	11−27 meV	Exp
Ne + He	Ionization	11−27 meV	Exp
Ne + Ne	Ionization	11−27 meV	Exp
Ne + Ar	Ionization	11−27 meV	Exp
$Ne + H_2$	Ionization	11−27 meV	Exp
$Ne + N_2$	Ionization	11−27 meV	Exp
$Ne + O_2$	Ionization	11−27 meV	Exp
$Ne^* + He$	Ionization	11−27 meV	Exp
$Ne^* + Ne$	Ionization	11−27 meV	Exp
$Ne^* + Ar$	Ionization	11−27 meV	Exp
$Ne^* + H_2$	Ionization	11−27 meV	Exp
$Ne^* + N_2$	Ionization	11−27 meV	Exp
$Ne^* + O_2$	Ionization	11−27 meV	Exp

1718. N. Haag, Z. Berenyi, P. Reinhed, D. Fischer, M. Gudmundsson, H.A.B. Johansson, H. T. Schmidt, H. Cederquist, H. Zettergren
Kinetic-energy-release distributions and barrier heights for $C_2{}^+$ emission from multiply charged C_{60} and C_{70} fullerenes.
Phys. Rev. A 78, 043201 (2008)

$Xe^{19+} + C_{60}$	Dissociation	57 keV	Exp
$Xe^{19+} + C_{70}$	Dissociation	57 keV	Exp
$Xe^{19+} + C_{60}$	Charge Transfer	57 keV	Exp
$Xe^{19+} + C_{70}$	Charge Transfer	57 keV	Exp

1719. B. C. Anger, G. Schrank, A. Schoeck, K. A. Butler, M. S. Solum, R. J. Pugmire, B. Saam
Gas-phase spin relaxation of ^{129}Xe.
Phys. Rev. A 78, 043406 (2008)

Xe + Xe	De-excitation	293−373 K	Exp
Xe + Xe	Elastic Scattering	293−373 K	Exp

1720. K. Igenbergs, J. Schweinzer, I. Bray, D. Bridi, F. Aumayr
Database for inelastic collisions of sodium atoms with electrons, protons, and multiply charged ions.
At. Data Nucl. Data Tables 94, 981 (2008)

$H^+ + Na$	Charge Transfer	1-10^7 eV	E/T
$H^+ + Na$	Excitation	1-10^7 eV	E/T
$He^{2+} + Na$	Excitation	1-10^7 eV	E/T
$Be^{4+} + Na$	Excitation	1-10^7 eV	E/T
$H^+ + Na$	Ionization	1-10^7 eV	E/T

1721. J. E. Miraglia, M. S. Gravielle
Ionization of the He, Ne, Ar, Kr, and Xe isoelectronic series by proton impact.
Phys. Rev. A 78, 052705 (2008)

hν + F^-	Detachment	25−1000 keV	E/T
hν + Cl^-	Detachment	25−1000 keV	E/T
hν + Br^-	Detachment	25−1000 keV	E/T
hν + I^-	Detachment	25−1000 keV	E/T
hν + He	Ionization	25−1000 keV	E/T
hν + Li^+	Ionization	25−1000 keV	E/T
hν + F^-	Ionization	25−1000 keV	E/T
hν + Ne	Ionization	25−1000 keV	E/T
hν + Na^+	Ionization	25−1000 keV	E/T
hν + Cl^-	Ionization	25−1000 keV	E/T
hν + Ar	Ionization	25−1000 keV	E/T
hν + K^+	Ionization	25−1000 keV	E/T
hν + Br^-	Ionization	25−1000 keV	E/T
hν + Kr	Ionization	25−1000 keV	E/T
hν + Rb^+	Ionization	25−1000 keV	E/T
hν + I^-	Ionization	25−1000 keV	E/T
hν + Xe	Ionization	25−1000 keV	E/T

1722. C. Y. Lin, P. C. Stancil, H.-P. Liebermann, P. Funke, R. J. Buenker
Inelastic processes in collisions of Na(3s,3p) with He at thermal energies.
Phys. Rev. A 78, 052706 (2008)

Na + He	De-excitation	0.001−10 eV	Th
Na + He	Excitation	0.001−10 eV	Th

1723. O. Gonzalez-Magana, R. Cabrera-Trujillo, G. Hinojosa
Collision-induced fragmentation cross sections of $CO_2{}^+$ on He: Experiment and theory.
Phys. Rev. A 78, 052712 (2008)

$CO_2{}^+$ + He	Dissociation	1−9 keV	E/T

1724. A. Faure, E. Josselin
Collisional excitation of water in warm astrophysical media. I. Rate coefficients for rovibrationally excited states.
Astron. Astrophys. 492, 257 (2008)

H_2 + H_2O	Excitation	200−5000 K	Th

1725. N. F. Allard, J. F. Kielkopf
Collisional effects in the far red wing of $Lyman-\alpha$.
Astron. Astrophys. 493, 1155 (2008)

H + H	Line Broadening	10,000 K	Th
H^+ + H	Line Broadening	10,000 K	Th

1726. M.-L. Dubernet, F. Daniel, A. Grosjean, C. Y. Lin
Rotational excitation of $ortho-H_2O$ by $para-H_2$ (j_2 = 0, 2, 4, 6, 8) at high temperature.
Astron. Astrophys. 497, 911 (2009)

H_2 + H_2O	Excitation	0−1500 K	Th

1727. S. Bovino, M. Wernli, F. A. Gianturco
Fast LiH destruction in reaction with H: Quantum calculations and astrophysical consequences.
Astrophys. J. 699, 383 (2009)

LiH + H	Interchange reaction	10−10,000 K	E/T

1728. B. H. Yang, P. C. Stancil
Rotational excitation of CH_4 by He atoms.
Eur. Phys. J. D 49, 317 (2008)

He + CH_4	Energy Transfer	10^{-7}-3000 cm^{-1}	Th

1729. P. G. Jambrina, J. Aldegunde, J. F. Castillo, F. J. Aoiz, V. Saez Rabanos
Vibrationally inelastic collisions of H + D_2: A comparison of quantum mechanical, quasiclassical, and experimental results.
J. Chem. Phys. 130, 031102 (2009)

H + H_2	Excitation	1.72 eV	Th
H + D_2	Excitation	1.72 eV	Th

1730. G. Czako, B. C. Shepler, B. J. Braams, J. M. Bowman
Accurate ab initio potential energy surface, dynamics, and thermochemistry of the F + CH_4 -¿ HF + CH_3 reaction.
J. Chem. Phys. 130, 084301 (2009)

F + CH_4	Interchange reaction	630 cm^{-1}	Th

1731. G. Quemener, N. Balakrishnan
Quantum calculations of $H_2 - H_2$ collisions: From ultracold to thermal energies.
J. Chem. Phys. 130, 114303 (2009)

H_2 + H_2	Excitation	0.001−1.0 eV	Th

1732. B. Yang, P. C. Stancil
Rotational quenching of CO_2 by collision with He atoms.
J. Chem. Phys. 130, 134319 (2009)

He + CO_2	De-excitation	10^{-6}-10^{4} cm^{-1}	Th

1733. T.-S. Chu, K.-L. Han, M. Hankel, G. G. Balint-Kurti, A. Kuppermann, R. Abrol
Nonadiabatic effects in the H + H_2 exchange reaction: Accurate quantum dynamics calculations at a state-to-state level.
J. Chem. Phys. 130, 144301 (2009)

H + H_2	Interchange reaction	0.0−3.0 eV	Th

1734. P. G. Jambrina, F. J. Aoiz, C. J. Eyles, V. J. Herrero, V. Saez Rabanos
Cumulative reaction probabilities and transition state properties: A study of the $H^+ + H_2$ and $H^+ + D_2$ proton exchange reactions.
J. Chem. Phys. 130, 184303 (2009)

H^+ + H_2	Interchange reaction	0.0−1.2 eV	Th
H^+ + D_2	Interchange reaction	0.0−1.2 eV	Th

1735. N. Bulut, A. Zanchet, P. Honvault, B. Bussery-Honvault, L. Banares
Time-dependent wave packet and quasiclassical trajectory study of the $C(^3P)$ + $OH(X^2\pi)$ -¿ $CO(X^1\Sigma^+)$ + $H(^2S)$ reaction at the state-to-state level.
J. Chem. Phys. 130, 194303 (2009)

C + OH	Interchange reaction	0.05−1.0 eV	Th

1736. R. D. Sharma, J. A. Welsh
Vibrational energy transfer in $O_2(v$ = 2-8) - $O_2(v$ = 0) collisions.
J. Chem. Phys. 130, 194306 (2009)

O_2 + O_2	Energy Transfer	150−450 K	Th

1737. F. Najar, D. Ben Abdallah, N. Jaidane, Z. Ben Lakhdar, G. Chambaud, M. Hochlaf
Rotational excitation and de-excitation of $C_2(X^1\Sigma_g{}^+)$ by $para - H_2(j$=0).
J. Chem. Phys. 130, 204305 (2009)

C_2 + H_2	De-excitation	0.1−4000 cm^{-1}	Th
C_2 + H_2	Excitation	0.1−4000 cm^{-1}	Th

1738. S. T. Banks, C. S. Tautermann, S. M. Remmert, D. C. Clary
An improved treatment of spectator mode vibrations in reduced dimensional quantum dynamics: Application to the hydrogen abstraction reactions μ + CH_4, H + CH_4, D + CH_4, and CH_3 + CH_4.
J. Chem. Phys. 131, 044111 (2009)

H + CH_4	Interchange reaction	0−5000 K	Th
D + CH_4	Interchange reaction	0−5000 K	Th
CH_3 + CH_4	Interchange reaction	0−5000 K	Th

1739. T. Gonzalez-Lezana, P. Honvault, P. G. Jambrina, F. J. Aoiz, J.-M. Launay
Effects of the rotational excitation of D_2 and of the potential energy surface on the H^+ + D_2 -¿ HD + D^+ reaction.
J. Chem. Phys. 131, 044315 (2009)

H^+ + H_2	Interchange reaction	0.1−0.5 eV	Th
H^+ + D_2	Interchange reaction	0.1−0.5 eV	Th

1740. P. Gamallo, P. Defazio
Born-Oppenheimer and Renner-Teller coupled-channel quantum dynamics of the $N(^2D)$ + HD reactions.
J. Chem. Phys. 131, 044320 (2009)

N + H_2	Interchange reaction	150−300 K	Th
N + HD	Interchange reaction	150−300 K	Th

1741. I. D. Kaganovich, A. Shnidman, H. Mebane, R. C. Davidson
Calculation of charge-changing cross-sections of ions or atoms colliding with fast ions using the classical trajectory method.
Nucl. Instrum. Methods Phys. Res. A 606, 196 (2009)

H^+ + H	Charge Transfer	0.02−100 MeV	Th
H^+ + He	Charge Transfer	0.02−100 MeV	Th
He^{2+} + H	Charge Transfer	0.02−100 MeV	Th
He^{2+} + He	Charge Transfer	0.02−100 MeV	Th
Li^{3+} + H	Charge Transfer	0.02−100 MeV	Th
Li^{3+} + He	Charge Transfer	0.02−100 MeV	Th
C^{6+} + H	Charge Transfer	0.02−100 MeV	Th
C^{6+} + He	Charge Transfer	0.02−100 MeV	Th
O^{8+} + H	Charge Transfer	0.02−100 MeV	Th
O^{8+} + He	Charge Transfer	0.02−100 MeV	Th
Ar^{3+} + H	Charge Transfer	0.02−100 MeV	Th

Ar^{3+} + He	Charge Transfer	0.02−100 MeV	Th
H^{+} + H	Ionization	0.02−100 MeV	Th
H^{+} + He	Ionization	0.02−100 MeV	Th
He^{2+} + H	Ionization	0.02−100 MeV	Th
He^{2+} + He	Ionization	0.02−100 MeV	Th
Li^{3+} + H	Ionization	0.02−100 MeV	Th
Li^{3+} + He	Ionization	0.02−100 MeV	Th
C^{6+} + H	Ionization	0.02−100 MeV	Th
C^{6+} + He	Ionization	0.02−100 MeV	Th
O^{8+} + H	Ionization	0.02−100 MeV	Th
O^{8+} + He	Ionization	0.02−100 MeV	Th
Ar^{3+} + H	Ionization	0.02−100 MeV	Th
Ar^{3+} + He	Ionization	0.02−100 MeV	Th

1742. M. Purkait
Double excitation of helium in collisions with proton and antiproton impact in the energy range 50-500 keV.
Nucl. Instrum. Methods Phys. Res. B 267, 32 (2009)

H^{+} + He	Excitation	50−500 keV	Th

1743. H. Ben Abdelouahed, S. Incerti, A. Mantero
New Geant4 cross section models for PIXE simulation.
Nucl. Instrum. Methods Phys. Res. B 267, 37 (2009)

H^{+} + C	Ionization	0−2.5 MeV	Th
H^{+} + Si	Ionization	0−2.5 MeV	Th
H^{+} + Cu	Ionization	0−2.5 MeV	Th
H^{+} + Y	Ionization	0−2.5 MeV	Th
H^{+} + Cd	Ionization	0−2.5 MeV	Th
H^{+} + Sb	Ionization	0−2.5 MeV	Th
H^{+} + Te	Ionization	0−2.5 MeV	Th
H^{+} + Dy	Ionization	0−2.5 MeV	Th
H^{+} + Ta	Ionization	0−2.5 MeV	Th
H^{+} + Re	Ionization	0−2.5 MeV	Th
H^{+} + Th	Ionization	0−2.5 MeV	Th
He^{2+} + C	Ionization	0−2.5 MeV	Th
He^{2+} + Si	Ionization	0−2.5 MeV	Th
He^{2+} + Cu	Ionization	0−2.5 MeV	Th
He^{2+} + Y	Ionization	0−2.5 MeV	Th
He^{2+} + Cd	Ionization	0−2.5 MeV	Th
He^{2+} + Sb	Ionization	0−2.5 MeV	Th
He^{2+} + Te	Ionization	0−2.5 MeV	Th
He^{2+} + Dy	Ionization	0−2.5 MeV	Th
He^{2+} + Ta	Ionization	0−2.5 MeV	Th
He^{2+} + Re	Ionization	0−2.5 MeV	Th
He^{2+} + Th	Ionization	0−2.5 MeV	Th

1744. D. Misra, K. V. Thulasiram, W. Fernandes, A. H. Kelkar, U. Kadhane, A. Kumar, Y. Singh, L. Gulyas, L. C. Tribedi
Double differential distributions of electron emission in ion-atom and electron-atom collisions using an electron spectrometer.
Nucl. Instrum. Methods Phys. Res. B 267, 157 (2009)

C^{6+} + He	Ionization	2 keV; 3.7 MeV/amu	Exp

1745. M. Schulz, R. Moshammer, D. Fischer, M. Duerr, J. Ullrich, A. Hasan, M. F. Ciappina, T. Kirchner

Current status of kinematically complete studies of basic fragmentation processes in atomic systems.
Nucl. Instrum. Methods Phys. Res. B 267, 187 (2009)

$\mathbf{H^+ + He}$	Ionization	75-10^5 keV/amu	Exp
$\mathbf{C^{6+} + He}$	Ionization	75-10^5 keV/amu	Exp

1746. J. R. Sabin, R. Cabrerra-Trujillo, N. Stolterfoht, E. Deumens, Y. Oehrn
Fragmentation of water on swift $^3He^{2+}$ ion impact.
Nucl. Instrum. Methods Phys. Res. B 267, 196 (2009)

$\mathbf{He^{2+} + H_2O}$	Dissociation	1−5 keV	Exp

1747. J. A. Tanis
Interferences in coherent electron emission from diatomic molecules.
Nucl. Instrum. Methods Phys. Res. B 267, 201 (2009)

$\mathbf{H^+ + H_2}$	Ionization	1−60 MeV	E/T
$\mathbf{H^+ + N_2}$	Ionization	1−60 MeV	E/T
$\mathbf{Kr^{34+} + H_2}$	Ionization	1−60 MeV	E/T
$\mathbf{Kr^{34+} + N_2}$	Ionization	1−60 MeV	E/T

1748. F. Fremont, S. Suarez, R. O. Barrachina, A. Hajaji, N. Sisourat, A. Dubois, J. Y. Chesnel
Young-type interferences using single-electron sources and an atomic-size two-center interferometer: Dependence with interferometer parameters.
Nucl. Instrum. Methods Phys. Res. B 267, 206 (2009)

$\mathbf{He^{2+} + H_2}$	Charge Transfer	8−105 keV	Exp
$\mathbf{N^{6+} + H_2}$	Charge Transfer	8−105 keV	Exp
$\mathbf{He^{2+} + H_2}$	Ionization	8−105 keV	Exp
$\mathbf{N^{6+} + H_2}$	Ionization	8−105 keV	Exp

1749. L. Sarkadi, A. Orban
Study of the electron-electron correlation via observing the two-electron cusp.
Nucl. Instrum. Methods Phys. Res. B 267, 270 (2009)

He + He	Ionization	100 keV	E/T

1750. M. A. Acuna, J. Fiol
Quantum-trajectory calculations of proton-hydrogen model collisions.
Nucl. Instrum. Methods Phys. Res. B 267, 288 (2009)

$\mathbf{H^+ + H}$	Charge Transfer		Th
$\mathbf{H^+ + H}$	Ionization		Th

1751. F. Jarai-Szabo, L. Nagy
Impact parameter method calculations for fully differential ionization cross sections.
Nucl. Instrum. Methods Phys. Res. B 267, 292 (2009)

$\mathbf{C^{6+} + He}$	Ionization	100 MeV/amu	Th

1752. J. V. Jovanovic, Z. Lj. Petrovic, V. Stojanovic
Cross-sections and transport properties of F^- ions in Ar, Kr and Xe.
Nucl. Instrum. Methods Phys. Res. B 267, 295 (2009)

F^- + Ar	Elastic Scattering	10^{-3}-100 eV	Th
F^- + Kr	Elastic Scattering	10^{-3}-100 eV	Th
F^- + Xe	Elastic Scattering	10^{-3}-100 eV	Th
F^- + Ar	Detachment	10^{-3}-100 eV	Th
F^- + Kr	Detachment	10^{-3}-100 eV	Th
F^- + Xe	Detachment	10^{-3}-100 eV	Th

1753. Z. Juhasz, B. Sulik, F. Fremont, A. Hajaji, J.-Y. Chesnel
Anisotropic ion emission in the fragmentation of small molecules by highly charged ion impact.
Nucl. Instrum. Methods Phys. Res. B 267, 326 (2009)

N^{6+} + H_2O	Dissociation	30 keV	Exp
N^{6+} + CH_4	Dissociation	30 keV	Exp
O^{7+} + H_2O	Dissociation	30 keV	Exp
O^{7+} + CH_4	Dissociation	30 keV	Exp

1754. M. Winkworth, P. D. Fainstein, M. E. Galassi, J. Baran, B. S. Dassanayake, S. Das, A. Kayani, J. A. Tanis
Interferences in electron emission from O_2 by 30 MeV $O^{5,8+}$ impact.
Nucl. Instrum. Methods Phys. Res. B 267, 373 (2009)

O^{5+} + O_2	Ionization	30 MeV	Exp
O^{8+} + O_2	Ionization	30 MeV	Exp

1755. J. S. Alexander, A. C. Laforge, A. Hasan, Z. S. Machavariani, M. F. Ciappina, R. D. Rivarola, D. H. Madison, M. Schulz
Interference effects due to projectile target nucleus scattering in single ionization of H_2 by 75-keV proton impact.
Phys. Rev. A 78, 060701 (2008)

H^+ + H	Total Scattering	75 keV	E/T
H^+ + He	Total Scattering	75 keV	E/T
H^+ + H_2	Total Scattering	75 keV	E/T
H^+ + H	Ionization	75 keV	E/T
H^+ + He	Ionization	75 keV	E/T
H^+ + H_2	Ionization	75 keV	E/T

1756. H. Suno, B. D. Esry
Adiabatic hyperspherical study of triatomic helium systems.
Phys. Rev. A 78, 062701 (2008)

He + He_2	Elastic Scattering	10^{-3}-10 mK	Th
He + He_2	Interaction Potentials	10^{-3}-10 mK	Th

1757. R. L. Watson, V. Horvat, Y. Peng
$K\alpha$ x-ray satellite and hypersatellite spectra of vanadium metal and oxides excited in heavy-ion collisions.
Phys. Rev. A 78, 062702 (2008)

Ne^+ + V	Fluorescence	15 MeV/u	Exp
Ne^+ + V_2O_5	Fluorescence	15 MeV/u	Exp
Ne^+ + VO	Fluorescence	15 MeV/u	Exp
Ne^+ + V_2O_4	Fluorescence	15 MeV/u	Exp
Ar^+ + V	Fluorescence	15 MeV/u	Exp
Ar^+ + V_2O_5	Fluorescence	15 MeV/u	Exp
Ar^+ + VO	Fluorescence	15 MeV/u	Exp

$\mathbf{Ar^+ + V_2O_4}$	Fluorescence	15 MeV/u	Exp
$\mathbf{Kr^+ + V}$	Fluorescence	15 MeV/u	Exp
$\mathbf{Kr^+ + V_2O_5}$	Fluorescence	15 MeV/u	Exp
$\mathbf{Kr^+ + VO}$	Fluorescence	15 MeV/u	Exp
$\mathbf{Kr^+ + V_2O_4}$	Fluorescence	15 MeV/u	Exp
$\mathbf{Ag^+ + V}$	Fluorescence	15 MeV/u	Exp
$\mathbf{Ag^+ + V_2O_5}$	Fluorescence	15 MeV/u	Exp
$\mathbf{Ag^+ + VO}$	Fluorescence	15 MeV/u	Exp
$\mathbf{Ag^+ + V_2O_4}$	Fluorescence	15 MeV/u	Exp
$\mathbf{Ho^+ + V}$	Fluorescence	15 MeV/u	Exp
$\mathbf{Ho^+ + V_2O_5}$	Fluorescence	15 MeV/u	Exp
$\mathbf{Ho^+ + VO}$	Fluorescence	15 MeV/u	Exp
$\mathbf{Ho^+ + V_2O_4}$	Fluorescence	15 MeV/u	Exp

1758. A. Le Padellec, J. Lievin, E. M. Staicu-Casagrande, T. Nzeyimana, E. A. Naji, X. Urbain
Competitive processes in the associative ionization of C^- with C^+, N^+, and O^+.
Phys. Rev. A 78, 062705 (2008)

$\mathbf{C^+ + C^-}$	Association	0.01−10 eV	Exp
$\mathbf{N^+ + C^-}$	Association	0.01−10 eV	Exp
$\mathbf{O^+ + C^-}$	Association	0.01−10 eV	Exp
$\mathbf{C^+ + C^-}$	Ionization	0.01−10 eV	Exp
$\mathbf{N^+ + C^-}$	Ionization	0.01−10 eV	Exp
$\mathbf{O^+ + C^-}$	Ionization	0.01−10 eV	Exp

1759. J. Y. Zhang, J. Mitroy, H. R. Sadeghpour, M.W.J. Bromley
Long-range interactions of copper and silver atoms with hydrogen, helium, and rare-gas atoms.
Phys. Rev. A 78, 062710 (2008)

Cu + H	Energy Transfer		Th
Cu + He	Energy Transfer		Th
Cu + Ne	Energy Transfer		Th
Cu + Ar	Energy Transfer		Th
Cu + Kr	Energy Transfer		Th
Cu + Xe	Energy Transfer		Th
$\mathbf{Cu^* + H}$	Energy Transfer		Th
$\mathbf{Cu^* + He}$	Energy Transfer		Th
$\mathbf{Cu^* + Ne}$	Energy Transfer		Th
$\mathbf{Cu^* + Ar}$	Energy Transfer		Th
$\mathbf{Cu^* + Kr}$	Energy Transfer		Th
$\mathbf{Cu^* + Xe}$	Energy Transfer		Th
Ag + H	Energy Transfer		Th
Ag + He	Energy Transfer		Th
Ag + Ne	Energy Transfer		Th
Ag + Ar	Energy Transfer		Th
Ag + Kr	Energy Transfer		Th
Ag + Xe	Energy Transfer		Th
$\mathbf{Ag^* + H}$	Energy Transfer		Th
$\mathbf{Ag^* + He}$	Energy Transfer		Th
$\mathbf{Ag^* + Ne}$	Energy Transfer		Th
$\mathbf{Ag^* + Ar}$	Energy Transfer		Th
$\mathbf{Ag^* + Kr}$	Energy Transfer		Th
$\mathbf{Ag^* + Xe}$	Energy Transfer		Th

1760. H. Martinez, F. B. Alarcon, A. Amaya-Tapia
Double capture cross sections in p-Ar collisions.
Phys. Rev. A 78, 062715 (2008)

$\mathbf{H^+ + Ar}$	Charge Transfer	3−100 keV	E/T
$\mathbf{H^+ + Ar}$	Total Scattering	3−100 keV	E/T

1761. B. W. Ding, X. M. Chen, D. Y. Yu, H. B. Fu, G. Z. Sun, Y. W. Liu
L-shell ionization accompanied by one-electron capture in C^{q+}, O^{q+} (q=2,3)-Ne collisions.
Phys. Rev. A 78, 062718 (2008)

$\mathbf{C^{2+} + Ne}$	Charge Transfer	80−400 keV/u	Exp
$\mathbf{C^{3+} + Ne}$	Charge Transfer	80−400 keV/u	Exp
$\mathbf{O^{2+} + Ne}$	Charge Transfer	80−400 keV/u	Exp
$\mathbf{O^{3+} + Ne}$	Charge Transfer	80−400 keV/u	Exp

1762. Y. F. Lu, L. Q. Shi, Z. J. He, L. Zhang, B. Zhang, R. Hutton
Elastic scattering cross-section of proton from helium at the laboratory angle of 165 deg.
Nucl. Instrum. Methods Phys. Res. B 267, 760 (2009)

$\mathbf{H^+ + He}$	Elastic Scattering	1.6−3.6 MeV	E/T
$\mathbf{H^+ + He}$	Total Scattering	1.6−3.6 MeV	E/T

1763. C. Dal Cappello, C. Champion, O. Boudrioua, H. Lekadir, Y. Sato, D. Ohsawa
Theoretical and experimental investigations of electron emission in C^{6+} + H_2O collisions.
Nucl. Instrum. Methods Phys. Res. B 267, 781 (2009)

$\mathbf{C^{6+} + H_2O}$	Ionization	6 MeV/u	Exp

1764. S. Houamer, Y. V. Popov, C. Dal Cappello, C. Champion
Charge transfer in collisions of protons with water molecule at high projectile energies and small scattering angles.
Nucl. Instrum. Methods Phys. Res. B 267, 802 (2009)

$\mathbf{H^+ + He}$	Charge Transfer	10^{-1}-10 MeV	Exp
$\mathbf{H^+ + H_2O}$	Charge Transfer	10^{-1}-10 MeV	Exp
$\mathbf{H^+ + He}$	Total Scattering	10^{-1}-10 MeV	Exp
$\mathbf{H^+ + H_2O}$	Total Scattering	10^{-1}-10 MeV	Exp

1765. C. Champion, C. Dal Cappello
Theoretical investigations of electron emission after water vapour ionization by light ion impact.
Nucl. Instrum. Methods Phys. Res. B 267, 881 (2009)

$\mathbf{H^+ + H_2O}$	Total Scattering	0.15−72 MeV	Th
$\mathbf{He^{2+} + H_2O}$	Total Scattering	0.15−72 MeV	Th
$\mathbf{C^{6+} + H_2O}$	Total Scattering	0.15−72 MeV	Th
$\mathbf{H^+ + H_2O}$	Ionization	0.15−72 MeV	Th
$\mathbf{He^{2+} + H_2O}$	Ionization	0.15−72 MeV	Th
$\mathbf{C^{6+} + H_2O}$	Ionization	0.15−72 MeV	Th

1766. K. Kawatsura, K. Takahiro, M. Sataka, M. Imai, H. Sugai, K. Ozaki, H. Shibata, K. Komaki
Autoionization of N^{q+} (q = 1-3) Rydberg states produced in high-energy collisions with He.
Nucl. Instrum. Methods Phys. Res. B 267, 901 (2009)

$\mathbf{N^+ + He}$	Excitation	14−21 MeV	Exp
$\mathbf{N^{2+} + He}$	Excitation	14−21 MeV	Exp
$\mathbf{N^{3+} + He}$	Excitation	14−21 MeV	Exp
$\mathbf{N^+ + He}$	Ionization	14−21 MeV	Exp
$\mathbf{N^{2+} + He}$	Ionization	14−21 MeV	Exp
$\mathbf{N^{3+} + He}$	Ionization	14−21 MeV	Exp

1767. S. Ouziane, A. Amokrane, I. Toumert, A. Nourreddine
$^4He-induced$ **L X-ray production cross sections in Pt and Bi.**
Nucl. Instrum. Methods Phys. Res. B 267, 1764 (2009)

He^+ + Pt	Excitation	2–3 MeV	Exp
He^+ + Bi	Excitation	2–3 MeV	Exp
He^+ + Pt	Ionization	2–3 MeV	Exp
He^+ + Bi	Ionization	2–3 MeV	Exp

1768. J. Reyes-Herrera, J. Miranda
K X-ray emission induced by $^{12}C^{4+}$ and $^{16}O^{5+}$ ion impact on selected lanthanoids.
Nucl. Instrum. Methods Phys. Res. B 267, 1767 (2009)

C^{4+} + Ce	Excitation	12–14 MeV	E/T
C^{4+} + Gd	Excitation	12–14 MeV	E/T
C^{4+} + Dy	Excitation	12–14 MeV	E/T
C^{4+} + Ho	Excitation	12–14 MeV	E/T
C^{4+} + Er	Excitation	12–14 MeV	E/T
O^{5+} + Ce	Excitation	12–14 MeV	E/T
O^{5+} + Gd	Excitation	12–14 MeV	E/T
O^{5+} + Dy	Excitation	12–14 MeV	E/T
O^{5+} + Ho	Excitation	12–14 MeV	E/T
O^{5+} + Er	Excitation	12–14 MeV	E/T
C^{4+} + Ce	Ionization	12–14 MeV	E/T
C^{4+} + Gd	Ionization	12–14 MeV	E/T
C^{4+} + Dy	Ionization	12–14 MeV	E/T
C^{4+} + Ho	Ionization	12–14 MeV	E/T
C^{4+} + Er	Ionization	12–14 MeV	E/T
O^{5+} + Ce	Ionization	12–14 MeV	E/T
O^{5+} + Gd	Ionization	12–14 MeV	E/T
O^{5+} + Dy	Ionization	12–14 MeV	E/T
O^{5+} + Ho	Ionization	12–14 MeV	E/T
O^{5+} + Er	Ionization	12–14 MeV	E/T

1769. W. Ding, L. Q. Shi, X. G. Long, S. Z. Luo, S. M. Peng, B. Zhang, X. J. Xia
Cross-section for D(p,p)D elastic scattering from 1.8 to 3.2 MeV at the laboratory angles of 155 deg **and 165** deg**.**
Nucl. Instrum. Methods Phys. Res. B 267, 2341 (2009)

H^+ + H	Elastic Scattering	1.8–3.2 MeV	Exp
D^+ + D	Elastic Scattering	1.8–3.2 MeV	Exp
H^+ + H	Total Scattering	1.8–3.2 MeV	Exp
D^+ + D	Total Scattering	1.8–3.2 MeV	Exp

1770. M.-Y. Song, M. S. Litsarev, V. P. Shevelko, H. Tawara, J.-S. Yoon
Single- and multiple-electron loss cross-sections for fast heavy ions colliding with neutrals: Semi-classical calculations.
Nucl. Instrum. Methods Phys. Res. B 267, 2369 (2009)

Ar^+ + H	Ionization	1–35 MeV/amu	Th
Ar^+ + N	Ionization	1–35 MeV/amu	Th
Ar^+ + Ne	Ionization	1–35 MeV/amu	Th
Ar^+ + Ar	Ionization	1–35 MeV/amu	Th
Ar^+ + Kr	Ionization	1–35 MeV/amu	Th
Ar^+ + Xe	Ionization	1–35 MeV/amu	Th
Ar^+ + U	Ionization	1–35 MeV/amu	Th
Ar^{2+} + H	Ionization	1–35 MeV/amu	Th

$\mathbf{Ar}^{2+}$ + **N**	Ionization	1−35 MeV/amu	Th
$\mathbf{Ar}^{2+}$ + **Ne**	Ionization	1−35 MeV/amu	Th
$\mathbf{Ar}^{2+}$ + **Ar**	Ionization	1−35 MeV/amu	Th
$\mathbf{Ar}^{2+}$ + **Kr**	Ionization	1−35 MeV/amu	Th
$\mathbf{Ar}^{2+}$ + **Xe**	Ionization	1−35 MeV/amu	Th
$\mathbf{Ar}^{2+}$ + **U**	Ionization	1−35 MeV/amu	Th
$\mathbf{Kr}^{7+}$ + **H**	Ionization	1−35 MeV/amu	Th
$\mathbf{Kr}^{7+}$ + **N**	Ionization	1−35 MeV/amu	Th
$\mathbf{Kr}^{7+}$ + **Ne**	Ionization	1−35 MeV/amu	Th
$\mathbf{Kr}^{7+}$ + **Ar**	Ionization	1−35 MeV/amu	Th
$\mathbf{Kr}^{7+}$ + **Kr**	Ionization	1−35 MeV/amu	Th
$\mathbf{Kr}^{7+}$ + **Xe**	Ionization	1−35 MeV/amu	Th
$\mathbf{Kr}^{7+}$ + **U**	Ionization	1−35 MeV/amu	Th
$\mathbf{Xe}^{3+}$ + **H**	Ionization	1−35 MeV/amu	Th
$\mathbf{Xe}^{3+}$ + **N**	Ionization	1−35 MeV/amu	Th
$\mathbf{Xe}^{3+}$ + **Ne**	Ionization	1−35 MeV/amu	Th
$\mathbf{Xe}^{3+}$ + **Ar**	Ionization	1−35 MeV/amu	Th
$\mathbf{Xe}^{3+}$ + **Kr**	Ionization	1−35 MeV/amu	Th
$\mathbf{Xe}^{3+}$ + **Xe**	Ionization	1−35 MeV/amu	Th
$\mathbf{Xe}^{3+}$ + **U**	Ionization	1−35 MeV/amu	Th
$\mathbf{Xe}^{18+}$ + **H**	Ionization	1−35 MeV/amu	Th
$\mathbf{Xe}^{18+}$ + **N**	Ionization	1−35 MeV/amu	Th
$\mathbf{Xe}^{18+}$ + **Ne**	Ionization	1−35 MeV/amu	Th
$\mathbf{Xe}^{18+}$ + **Ar**	Ionization	1−35 MeV/amu	Th
$\mathbf{Xe}^{18+}$ + **Kr**	Ionization	1−35 MeV/amu	Th
$\mathbf{Xe}^{18+}$ + **Xe**	Ionization	1−35 MeV/amu	Th
$\mathbf{Xe}^{18+}$ + **U**	Ionization	1−35 MeV/amu	Th
$\mathbf{Pb}^{25+}$ + **H**	Ionization	1−35 MeV/amu	Th
$\mathbf{Pb}^{25+}$ + **N**	Ionization	1−35 MeV/amu	Th
$\mathbf{Pb}^{25+}$ + **Ne**	Ionization	1−35 MeV/amu	Th
$\mathbf{Pb}^{25+}$ + **Ar**	Ionization	1−35 MeV/amu	Th
$\mathbf{Pb}^{25+}$ + **Kr**	Ionization	1−35 MeV/amu	Th
$\mathbf{Pb}^{25+}$ + **Xe**	Ionization	1−35 MeV/amu	Th
$\mathbf{Pb}^{25+}$ + **U**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{18+}$ + **H**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{18+}$ + **N**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{18+}$ + **Ne**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{18+}$ + **Ar**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{18+}$ + **Kr**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{18+}$ + **Xe**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{18+}$ + **U**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{28+}$ + **H**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{28+}$ + **N**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{28+}$ + **Ne**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{28+}$ + **Ar**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{28+}$ + **Kr**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{28+}$ + **Xe**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{28+}$ + **U**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{39+}$ + **H**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{39+}$ + **N**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{39+}$ + **Ne**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{39+}$ + **Ar**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{39+}$ + **Kr**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{39+}$ + **Xe**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{39+}$ + **U**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{62+}$ + **H**	Ionization	1−35 MeV/amu	Th
$\mathbf{U}^{62+}$ + **N**	Ionization	1−35 MeV/amu	Th

U^{62+} + Ne	Ionization	1−35 MeV/amu	Th
U^{62+} + Ar	Ionization	1−35 MeV/amu	Th
U^{62+} + Kr	Ionization	1−35 MeV/amu	Th
U^{62+} + Xe	Ionization	1−35 MeV/amu	Th
U^{62+} + U	Ionization	1−35 MeV/amu	Th

1771. L.Ph.H. Schmidt, S. Schoessler, F. Afaneh, M. Schoeffler, K. E. Stiebing, H. Schmidt-Boecking, R. Doerner
Young-type interference in collisions between hydrogen molecular ions and helium.
Phys. Rev. Lett. 101, 173202 (2008)

$H_2{}^+$ + He	Dissociation	10 keV	Exp
$H_2{}^+$ + He	Charge Transfer	10 keV	Exp

1772. M. Ziemkiewicz, D. J. Nesbitt
Nonadiabatic reactive scattering in atom+triatom systems: Nascent rovibronic distributions in F + H_2O -¿ HF + OH.
J. Chem. Phys. 131, 054309 (2009)

F + H_2O	Interchange reaction	25 kcal/mol	Exp

1773. A. A. Narits
Charge transfer between fullerenes and highly charged noble gas ions.
J. Phys. B 41, 135102 (2008)

Ar^{4+} + C_{60}	Charge Transfer	13−60 keV	Th
Ar^{4+} + $C_{60}{}^+$	Charge Transfer	13−60 keV	Th
Ar^{4+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th
Ar^{5+} + C_{60}	Charge Transfer	13−60 keV	Th
Ar^{5+} + $C_{60}{}^+$	Charge Transfer	13−60 keV	Th
Ar^{5+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th
Ar^{6+} + C_{60}	Charge Transfer	13−60 keV	Th
Ar^{6+} + $C_{60}{}^+$	Charge Transfer	13−60 keV	Th
Ar^{6+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th
Ar^{7+} + C_{60}	Charge Transfer	13−60 keV	Th
Ar^{7+} + $C_{60}{}^+$	Charge Transfer	13−60 keV	Th
Ar^{7+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th
Ar^{8+} + C_{60}	Charge Transfer	13−60 keV	Th
Ar^{8+} + $C_{60}{}^+$	Charge Transfer	13−60 keV	Th
Ar^{8+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th
Ar^{9+} + C_{60}	Charge Transfer	13−60 keV	Th
Ar^{9+} + $C_{60}{}^+$	Charge Transfer	13−60 keV	Th
Ar^{9+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th
Ar^{10+} + C_{60}	Charge Transfer	13−60 keV	Th
Ar^{10+} + $C_{60}{}^+$	Charge Transfer	13−60 keV	Th
Ar^{10+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th
Ar^{11+} + C_{60}	Charge Transfer	13−60 keV	Th
Ar^{11+} + $C_{60}{}^+$	Charge Transfer	13−60 keV	Th
Ar^{11+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th
Ar^{12+} + C_{60}	Charge Transfer	13−60 keV	Th
Ar^{12+} + $C_{60}{}^+$	Charge Transfer	13−60 keV	Th
Ar^{12+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th
Ar^{13+} + C_{60}	Charge Transfer	13−60 keV	Th
Ar^{13+} + $C_{60}{}^+$	Charge Transfer	13−60 keV	Th
Ar^{13+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th
Ar^{14+} + C_{60}	Charge Transfer	13−60 keV	Th

Ar^{14+} + $C_{60}{}^{+}$	Charge Transfer	13−60 keV	Th
Ar^{14+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th
Ar^{15+} + C_{60}	Charge Transfer	13−60 keV	Th
Ar^{15+} + $C_{60}{}^{+}$	Charge Transfer	13−60 keV	Th
Ar^{15+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th
Ar^{16+} + C_{60}	Charge Transfer	13−60 keV	Th
Ar^{16+} + $C_{60}{}^{+}$	Charge Transfer	13−60 keV	Th
Ar^{16+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th
Ar^{17+} + C_{60}	Charge Transfer	13−60 keV	Th
Ar^{17+} + $C_{60}{}^{+}$	Charge Transfer	13−60 keV	Th
Ar^{17+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th
Ar^{18+} + C_{60}	Charge Transfer	13−60 keV	Th
Ar^{18+} + $C_{60}{}^{+}$	Charge Transfer	13−60 keV	Th
Ar^{18+} + $C_{60}{}^{2+}$	Charge Transfer	13−60 keV	Th

1774. T. Minami, T.-G. Lee, M. S. Pindzola, D. R. Schultz
Total and state-selective charge transfer in He^{2+} + H collisions.
J. Phys. B 41, 135201 (2008)

He^{2+} + H	Charge Transfer	1−1000 keV/u	Th

1775. S. L. Zeng, L. Liu, J. G. Wang, R. K. Janev
Atomic collisions with screened Coulomb interactions: Excitation and electron capture in H^{+} + H collisions.
J. Phys. B 41, 135202 (2008)

H^{+} + H	Charge Transfer	1−400 keV	Th
H^{+} + H	Excitation	1−400 keV	Th

1776. A. B. Voitkiv
Electron-electron interaction and transfer ionization in fast ion-atom collisions.
J. Phys. B 41, 195201 (2008)

H^{+} + He	Charge Transfer	2−6 MeV	Th
He^{2+} + He	Charge Transfer	2−6 MeV	Th
C^{6+} + He	Charge Transfer	2−6 MeV	Th
H^{+} + He	Total Scattering	2−6 MeV	Th
He^{2+} + He	Total Scattering	2−6 MeV	Th
C^{6+} + He	Total Scattering	2−6 MeV	Th
H^{+} + He	Ionization	2−6 MeV	Th
He^{2+} + He	Ionization	2−6 MeV	Th
C^{6+} + He	Ionization	2−6 MeV	Th

1777. S. Knoop, D. Fischer, Y. Xue, M. Zapukhlyak, C. J. Osborne, Th. Ergler, T. Ferger, J. Braun, G. Brenner, H. Bruhns, C. Dimopoulou, S. W. Epp, A. J. Gonzalez Martinez, G. Sikler, R. Soria Orts, H. Tawara, T. Kirchner, J. R. Crespo Lopez-Urrutia, R. Moshammer, J. Ullrich, R. Hoekstra
Single-electron capture in keV $Ar^{15+} - Ar^{18+}$ + He collisions.
J. Phys. B 41, 195203 (2008)

Ar^{15+} + He	Charge Transfer	0.8−0.9 keV	E/T
Ar^{16+} + He	Charge Transfer	0.8−0.9 keV	E/T
Ar^{17+} + He	Charge Transfer	0.8−0.9 keV	E/T
Ar^{18+} + He	Charge Transfer	0.8−0.9 keV	E/T
Ar^{15+} + He	Total Scattering	0.8−0.9 keV	E/T
Ar^{16+} + He	Total Scattering	0.8−0.9 keV	E/T
Ar^{17+} + He	Total Scattering	0.8−0.9 keV	E/T
Ar^{18+} + He	Total Scattering	0.8−0.9 keV	E/T

1778. M. Gacesa, P. Pellegrini, R. Cote
Feshbach resonances in ultracold $^{6,7}Li$ + ^{23}Na atomic mixtures.
Phys. Rev. A 78, 010701 (2008)

Li + Na	Elastic Scattering	0−1200 G	Th

1779. M. Busch, S. Wethekam, H. Winter
Reexamination of local spin polarization at surfaces probed by hollow atoms.
Phys. Rev. A 78, 010901 (2008)

He^{2+} + O	Charge Transfer	64−500 eV	Exp
He^{2+} + Ni	Charge Transfer	64−500 eV	Exp
He^{2+} + NiO	Charge Transfer	64−500 eV	Exp

1780. S. Falke, H. Knockel, J. Friebe, M. Riedmann, E. Tiemann, C. Lisdat
Potassium ground-state scattering parameters and Born-Oppenheimer potentials from molecular spectroscopy.
Phys. Rev. A 78, 012503 (2008)

Li + Li	Interaction Potentials	2−11 $\AA$	Exp

1781. B. Zygelman, J. D. Weinstein
Theoretical and laboratory study of suppression effects in fine-structuring-changing collisions of Ti with He.
Phys. Rev. A 78, 012705 (2008)

Ti + He	De-excitation	0.001−6000 K	Th

1782. R. Cabrera-Trujillo, J. R. Sabin, E. Deumens, Y. Oehrn
Cross sections for H^+ and H atoms colliding with Li in the low-keV-energy region.
Phys. Rev. A 78, 012707 (2008)

H + Li	Charge Transfer	0.001−100 keV	Th
H^+ + Li	Charge Transfer	0.001−100 keV	Th
H + Li	Ionization	0.001−100 keV	Th
H^+ + Li	Ionization	0.001−100 keV	Th

1783. M. Nagao, K.-N. Hida, M. Kimura, S. N. Rai, H.-P. Liebermann, R. J. Buenker, H. Suno, P. C. Stancil
Charge transfer and excitation in $H^+ + CH_3$ collisions below 10 keV.
Phys. Rev. A 78, 012708 (2008)

H^+ + CH_3	Charge Transfer	50−10,000 eV	Th
H^+ + CH_3	Excitation	50−10,000 eV	Th

1784. J. L. Baran, S. Das, F. Jarai-Szabo, K. Pora, L. Nagy, J. A. Tanis
Suppression of primary electron interferences in the ionization of N_2 by 1-5-MeV/u protons.
Phys. Rev. A 78, 012710 (2008)

H^+ + N_2	Ionization	1−5 MeV/u	E/T

1785. A. L. Godunov, C. T. Whelan, H.R.J. Walters
Effect of angular electron correlation in He: Second-order calculations for transfer ionization.
Phys. Rev. A 78, 012714 (2008)

H^+ + He	Charge Transfer	630 keV	Th
H^+ + He	Total Scattering	630 keV	Th
H^+ + He	Ionization	630 keV	Th

3.3 Surface Interactions

1786. H. F. Krause, C. R. Vane, F. W. Meyer
Ions transmitted through an anodic nanocapillary array.
Phys. Rev. A 75, 042901 (2007)

$\mathbf{Ne^{3+} + Al_2O_3}$	Reflection	10−140 keV	Exp
$\mathbf{Ne^{7+} + Al_2O_3}$	Reflection	10−140 keV	Exp
$\mathbf{Ar^{+} + Al_2O_3}$	Reflection	10−140 keV	Exp
$\mathbf{Ar^{3+} + Al_2O_3}$	Reflection	10−140 keV	Exp

1787. A. J. Garcia, J. E. Miraglia
Total electron yields and stopping power of protons colliding with NaCl-type insulator surfaces.
Phys. Rev. A 75, 042904 (2007)

$\mathbf{H^{+} + LiF}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + LiCl}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + NaCl}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + KCl}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + NaF}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + KBr}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + NaI}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + KI}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + RbI}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + RbCl}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + LiI}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + RbF}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + KF}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + RbBr}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + LiBr}$	Secondary Electron Emission	2−6 v (a.u.)	Th
$\mathbf{H^{+} + NaBr}$	Secondary Electron Emission	2−6 v (a.u.)	Th

1788. H. Watanabe, J. Sun, M. Tona, N. Nakamura, M. Sakurai, C. Yamada, N. Yoshiyasu, S. Ohtani
X-ray emission in collisions of highly charged I, Pr, Ho, and Bi ions with a W surface.
Phys. Rev. A 75, 062901 (2007)

$\mathbf{I^{51+} + W}$	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp
$\mathbf{Pr^{57+} + W}$	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp
$\mathbf{Ho^{65+} + W}$	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp
$\mathbf{Bi^{73+} + W}$	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp
$\mathbf{Bi^{74+} + W}$	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp
$\mathbf{Bi^{75+} + W}$	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp
$\mathbf{Bi^{76+} + W}$	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp
$\mathbf{Bi^{77+} + W}$	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp
$\mathbf{Bi^{78+} + W}$	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp
$\mathbf{Bi^{79+} + W}$	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp
$\mathbf{Bi^{80+} + W}$	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp
$\mathbf{Bi^{81+} + W}$	Neutraliz., Ioniz., Dissoc.	255−284 keV	Exp

1789. M. S. Gravielle, I. Aldazabal, A. Arnau, V. H. Ponce, J. E. Miraglia, F. Aumayr, S. Lederer, H. Winter
Electron emission and energy loss in grazing collisions of protons with insulator surfaces.
Phys. Rev. A 76, 012904 (2007)

H^+ + LiF	Secondary Electron Emission	100−300 keV	E/T
H^+ + KCl	Secondary Electron Emission	100−300 keV	E/T
H^+ + KI	Secondary Electron Emission	100−300 keV	E/T

1790. H. Ogawa, T. Ohata, K. Ishii, N. Sakamoto, T. Kaneko
Dependence of secondary-electron emission on the emergent angle of frozen-charged H^0 and H^+ projectiles penetrating a thin carbon foil.
Phys. Rev. A 76, 024901 (2007)

H + C	Secondary Electron Emission	2.5−3.5 MeV	Exp
H^+ + C	Secondary Electron Emission	2.5−3.5 MeV	Exp

1791. S. Wethekam, H. Winter
Excitation of fullerene ions during grazing scattering from a metal surface.
Phys. Rev. A 76, 032901 (2007)

${C_{60}}^+$ + Al	Reflection	2.5−62.5 keV	Exp

1792. T. Matsushita, K. Nakajima, M. Suzuki, K. Kimura
Energy loss of slow ${C_{60}}^+$ ions during grazing scattering from a KCl(001) surface.
Phys. Rev. A 76, 032903 (2007)

Ne^+ + KCl	Reflection	1−5 keV	Exp
${C_{60}}^+$ + KCl	Reflection	1−5 keV	Exp

1793. S. Das, B. S. Dassanayake, M. Winkworth, J. L. Baran, N. Stolterfoht, J. A. Tanis
Inelastic guiding of electrons in polymer nanocapillaries.
Phys. Rev. A 76, 042716 (2007)

e + PET	Reflection	500−1000 eV	Exp
e + $C_{10}H_8O_4$	Reflection	500−1000 eV	Exp

1794. N. N. Nedeljkovic, M. D. Majkic
Intermediate stages of the Rydberg-level population of multiply charged ions escaping solid surfaces.
Phys. Rev. A 76, 042902 (2007)

Ar^{7+} + Al	Neutraliz., Ioniz., Dissoc.	2×10^6 cm/s	Th
Ar^{8+} + Al	Neutraliz., Ioniz., Dissoc.	2×10^6 cm/s	Th
Kr^{8+} + Al	Neutraliz., Ioniz., Dissoc.	2×10^6 cm/s	Th
Xe^{8+} + Al	Neutraliz., Ioniz., Dissoc.	2×10^6 cm/s	Th

1795. B. Obreshkov, U. Thumm
Nonresonant formation of H^- near unreconstructed Si(100) surfaces.
Phys. Rev. A 76, 052902 (2007)

H + Si	Reflection	50−150 eV	E/T

1796. E. Testa, P. N. Abufager, F. Bosch, A. Brauning-Demian, H. Brauning, M. Chevallier, C. Cohen, D. Dauvergne, A. Gumberidze, A. L'Hoir, R. Kirsch, C. Kozhuharov, D. Liesen, P. H. Mokler, J.-C. Poizat, C. Ray, R. D. Rivarola, J. P. Rozet, Th. Stoehlker, S. Toleikis, M. Toulemonde, D. Vernhet, P. Verma
Using channeling properties for studying the impact-parameter dependence of electron capture by 20-MeV/u uranium ions in a silicon crystal.
Phys. Rev. A 76, 062901 (2007)

U^{91+} + Si	Neutraliz., Ioniz., Dissoc.	20 MeV/u	Exp

1797. A. Chiba, Y. Saitoh, K. Narumi, M. Adachi, T. Kaneko
Average charge and its structure dependence of fragment ions under irradiation of a thin carbon foil with a 1-MeV/atom $C_3{}^+$ cluster ion.
Phys. Rev. A 76, 063201 (2007)

$\mathbf{C_3{}^+ + C}$	Neutraliz., Ioniz., Dissoc.	3 MeV	Exp

1798. T. Suzuki, Y. Yamauchi
Determination of the spin polarization of a $^4He^+$ ion beam.
Phys. Rev. A 77, 022902 (2007)

He + Fe	Neutraliz., Ioniz., Dissoc.	0.2−14 eV	Exp
$\mathbf{He^+ + Fe}$	Neutraliz., Ioniz., Dissoc.	0.2−14 eV	Exp
He + Fe	Sputtering	0.2−14 eV	Exp
$\mathbf{He^+ + Fe}$	Sputtering	0.2−14 eV	Exp

1799. J. Sun, H. Watanabe, M. Tona, T. Watanabe, N. Nakamura, C. Yamada, S. Ohtani
K and L x-ray emission from hollow atoms produced in the interaction of slow H-like (I^{52+}) and bare (I^{53+}) ions with different target materials.
Phys. Rev. A 77, 032901 (2007)

$\mathbf{I^{52+} + Be}$	Surface Interactions	182−186 eV	Exp
$\mathbf{I^{52+} + C}$	Surface Interactions	182−186 eV	Exp
$\mathbf{I^{52+} + Cu}$	Surface Interactions	182−186 eV	Exp
$\mathbf{I^{52+} + W}$	Surface Interactions	182−186 eV	Exp
$\mathbf{I^{53+} + Be}$	Surface Interactions	182−186 eV	Exp
$\mathbf{I^{53+} + C}$	Surface Interactions	182−186 eV	Exp
$\mathbf{I^{53+} + Cu}$	Surface Interactions	182−186 eV	Exp
$\mathbf{I^{53+} + W}$	Surface Interactions	182−186 eV	Exp
$\mathbf{I^{52+} + Be}$	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp
$\mathbf{I^{52+} + C}$	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp
$\mathbf{I^{52+} + Cu}$	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp
$\mathbf{I^{52+} + W}$	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp
$\mathbf{I^{53+} + Be}$	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp
$\mathbf{I^{53+} + C}$	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp
$\mathbf{I^{53+} + Cu}$	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp
$\mathbf{I^{53+} + W}$	Neutraliz., Ioniz., Dissoc.	182−186 eV	Exp

1800. P. Ecija, M. N. Sanchez Rayo, R. Martinez, B. Sierra, C. Redondo, F. J. Basterretxea, F. Castano
Fundamental processes in nanosecond pulsed laser ablation of metals in vacuum.
Phys. Rev. A 77, 032904 (2007)

$\mathbf{h\nu + NiFe}$	Sputtering	2.6−13.1 J/cm^2	Exp
$\mathbf{h\nu + Ni_2MnGa}$	Sputtering	2.6−13.1 J/cm^2	Exp

1801. N. Stolterfoht, R. Hellhammer, J. Bundesmann, D. Fink
Scaling laws for guiding of highly charged ions through nanocapillaries in an insulating polymer.
Phys. Rev. A 77, 032905 (2007)

$\mathbf{Ne^{7+} + PET}$	Reflection	3−40 keV	Exp
$\mathbf{Ne^{7+} + C_{10}H_8O_4}$	Reflection	3−40 keV	Exp
$\mathbf{Ar^{13+} + PET}$	Reflection	3−40 keV	Exp
$\mathbf{Ar^{13+} + C_{10}H_8O_4}$	Reflection	3−40 keV	Exp
$\mathbf{Xe^{25+} + PET}$	Reflection	3−40 keV	Exp
$\mathbf{Xe^{25+} + C_{10}H_8O_4}$	Reflection	3−40 keV	Exp

1802. Z. Insepov, M. Terasawa, K. Takayama
Surface erosion and modification by highly charged ions.
Phys. Rev. A 77, 062901 (2008)

Xe^{44+} + Si	Sputtering	1 keV	Th
Xe^{44+} + W	Sputtering	1 keV	Th

1803. M. Schlueter, C. Hopf, T. Schwarz-Selinger, W. Jacob
Temperature dependence of the chemical sputtering of amorphous hydrogenated carbon films by hydrogen.
J. Nucl. Mater. 376, 33 (2008)

H + C	Sputtering	0−800 eV	Exp
Ar^{+} + C	Sputtering	0−800 eV	Exp

1804. V. Kh. Alimov, J. Roth, S. Lindig
Surface modifications and deuterium depth profiles in molybdenum irradiated with low-energy D ions.
J. Nucl. Mater. 381, 267 (2008)

H^{+} + Mo	Trapping, Detrapping	200 eV	Exp
D^{+} + Mo	Trapping, Detrapping	200 eV	Exp

1805. R. Martinez-Casado, J. L. Vega, A. S. Sanz, S. Miret-Artes
Quasielastic He atom scattering from surfaces: A stochastic description of the dynamics of interacting adsorbates.
J. Phys. Condens. Matter 19, 305002 (2007)

He + Na + Cu	Reflection		E/T

1806. D. Farias, H. F. Busnengo, F. Martin
Probing reaction dynamics at metal surfaces with H_2 diffraction.
J. Phys. Condens. Matter 19, 305003 (2007)

H_2 + Pd	Adsorption, Desorption	0−600 meV	Th
H_2 + Pt	Adsorption, Desorption	0−600 meV	Th
H_2 + NiAl	Adsorption, Desorption	0−600 meV	Th

1807. W. W. Hayes, H. Ambaye, J. R. Manson
Atomic and molecular collisions with surfaces: Comparisons of Ar and N_2 scattering from Ru(0001).
J. Phys. Condens. Matter 19, 305007 (2007)

Ar + Ru	Reflection	0−0.2 eV	E/T
N_2 + Ru	Reflection	0−0.2 eV	E/T

1808. W. W. Hayes, H. Ambaye, J. R. Manson
Erratum: Atomic and molecular collisions with surfaces: Comparisons of Ar and N_2 scattering from Ru(0001) [J. Phys.: Condens. Matter 19, 305007 (2008)].
J. Phys. Condens. Matter 20, 219801 (2008)

Ar + Ru	Surface Interactions	0.8 eV	Th
N_2 + Ru	Surface Interactions	0.8 eV	Th

1809. A. Siber, B. Gumhalter
Phonon-mediated bound state resonances in inelastic atom-surface scattering.
J. Phys. Condens. Matter 20, 224002 (2008)

He + Cu	Reflection	0−140 MeV	Th
He + Xe	Reflection	0−140 MeV	Th

1810. M. Nishiwaki, S. Kato
Influence of electron irradiation and heating on secondary electron yields from non-evaporable getter films observed with in situ x-ray photoelectron spectroscopy.
J. Vac. Sci. Technol. A 25, 675 (2007)

e + C	Secondary Electron Emission	0−5 keV	Exp
e + Cu	Secondary Electron Emission	0−5 keV	Exp
e + TiZrV	Secondary Electron Emission	0−5 keV	Exp

1811. V. N. Ageev, Yu. A. Kuznetsov, T. E. Madey
Resonances in electron stimulated desorption yield of cesium atoms from germanium monolayer-covered tungsten.
J. Vac. Sci. Technol. A 25, 731 (2007)

e + Cs + Ge	Desorption	0−160 eV	Exp

1812. Ch. Day, X. Luo, A. Conte, A. Bonucci, P. Manini
Determination of the sticking probability of a Zr-V-Fe nonevaporable getter strip.
J. Vac. Sci. Technol. A 25, 824 (2007)

H_2 + ZrVFe	Adsorption, Desorption		E/T

1813. X. Chen, Z. Sroubek, J. A. Yarmoff
Multiply charged Al recoils with impact of 2.0 keV Si^+ ions.
J. Vac. Sci. Technol. A 25, 1123 (2007)

Si^+ + Al	Reflection	2 keV	Exp
Si^+ + Al	Sputtering	2 keV	Exp

1814. L. A. Giannuzzi, B. J. Garrison
Molecular dynamics simulations of 30 and 2 keV Ga in Si.
J. Vac. Sci. Technol. A 25, 1417 (2007)

Ga^+ + Si	Sputtering	2−30 keV	Th

1815. E. Despiau-Pujo, P. Chabert, D. B. Graves
Molecular dynamics simulations of GaAs sputtering under low-energy argon ion bombardment.
J. Vac. Sci. Technol. A 26, 274 (2007)

Ar^+ + GaAs	Sputtering	50−200 eV	Th

1816. K. W. Pierson, C. D. Hawes, J. T. Kollwitz, A. S. Padron
Multiparameter investigation of the sputtering behavior of Ag/Cu alloys for low energy argon ion bombardment.
J. Vac. Sci. Technol. A 26, 522 (2007)

Ar^+ + Ag	Sputtering	100−1500 eV	Exp
Ar^+ + Au	Sputtering	100−1500 eV	Exp

1817. A. H. Dogar, S. Ullah, A. Qayyum
Electron emission from carbon induced by the ions C^+, O^+, CO^+ and ${O_2}^+$.
Nucl. Instrum. Methods Phys. Res. B 280, 525 (2007)

C^+ + C	Secondary Electron Emission	2–20 keV	Exp
O^+ + C	Secondary Electron Emission	2–20 keV	Exp
CO^+ + C	Secondary Electron Emission	2–20 keV	Exp
$O_2{}^+$ + C	Secondary Electron Emission	2–20 keV	Exp

1818. K. Motohashi, S. Tsurubuchi
Proton sputtering from polycrystalline Al surface interacting with highly charged ions at grazing incidence angle.
Nucl. Instrum. Methods Phys. Res. B 264, 15 (2007)

Ar^{3+} + Al	Sputtering	7.5–32.5 keV	Exp
Ar^{4+} + Al	Sputtering	7.5–32.5 keV	Exp
Ar^{5+} + Al	Sputtering	7.5–32.5 keV	Exp
Ar^{6+} + Al	Sputtering	7.5–32.5 keV	Exp
Ar^{7+} + Al	Sputtering	7.5–32.5 keV	Exp
Ar^{8+} + Al	Sputtering	7.5–32.5 keV	Exp
Ar^{9+} + Al	Sputtering	7.5–32.5 keV	Exp
Ar^{10+} + Al	Sputtering	7.5–32.5 keV	Exp
Ar^{11+} + Al	Sputtering	7.5–32.5 keV	Exp
Ar^{12+} + Al	Sputtering	7.5–32.5 keV	Exp
Ar^{13+} + Al	Sputtering	7.5–32.5 keV	Exp

1819. X. Chen, Z. Sroubek, J. A. Yarmoff
Ionization in symmetric and nearly symmetric low energy ion-surface collisions.
Nucl. Instrum. Methods Phys. Res. B 264, 23 (2007)

Si^+ + Al	Sputtering	1–5 keV	Exp
Si^+ + Si	Sputtering	1–5 keV	Exp
P^+ + Al	Sputtering	1–5 keV	Exp
P^+ + Si	Sputtering	1–5 keV	Exp

1820. D. M. Danailov
Angular spectra of rainbow scattering at glancing keV He^+ bombardment of NiAl(100) surface with transverse energies in the range 1-10 eV.
Nucl. Instrum. Methods Phys. Res. B 264, 29 (2007)

He^+ + NiAl	Reflection	1–10 keV	Exp

1821. Y. Wang, Y. Zhao, A. Qayyum, G. Xiao
Separation of potential and kinetic electron emission from Si and W induced by multiply charged neon and argon ions.
Nucl. Instrum. Methods Phys. Res. B 265, 474 (2007)

Ne^{2+} + Si	Secondary Electron Emission	42–72 keV	Exp
Ne^{2+} + W	Secondary Electron Emission	42–72 keV	Exp
Ne^{3+} + Si	Secondary Electron Emission	42–72 keV	Exp
Ne^{3+} + W	Secondary Electron Emission	42–72 keV	Exp
Ne^{4+} + Si	Secondary Electron Emission	42–72 keV	Exp
Ne^{4+} + W	Secondary Electron Emission	42–72 keV	Exp
Ne^{5+} + Si	Secondary Electron Emission	42–72 keV	Exp
Ne^{5+} + W	Secondary Electron Emission	42–72 keV	Exp
Ne^{6+} + Si	Secondary Electron Emission	42–72 keV	Exp
Ne^{6+} + W	Secondary Electron Emission	42–72 keV	Exp
Ne^{7+} + Si	Secondary Electron Emission	42–72 keV	Exp
Ne^{7+} + W	Secondary Electron Emission	42–72 keV	Exp
Ne^{8+} + Si	Secondary Electron Emission	42–72 keV	Exp
Ar^{3+} + Si	Secondary Electron Emission	42–72 keV	Exp

Ar^{4+} + Si	Secondary Electron Emission	42−72 keV	Exp
Ar^{5+} + Si	Secondary Electron Emission	42−72 keV	Exp
Ar^{6+} + Si	Secondary Electron Emission	42−72 keV	Exp
Ar^{7+} + Si	Secondary Electron Emission	42−72 keV	Exp
Ar^{8+} + Si	Secondary Electron Emission	42−72 keV	Exp
Ar^{9+} + Si	Secondary Electron Emission	42−72 keV	Exp
Ar^{10+} + Si	Secondary Electron Emission	42−72 keV	Exp
Ar^{11+} + Si	Secondary Electron Emission	42−72 keV	Exp
Ar^{12+} + Si	Secondary Electron Emission	42−72 keV	Exp
Ar^{13+} + Si	Secondary Electron Emission	42−72 keV	Exp

1822. H. Gnaser
Isotopic fractionation of sputtered anions: C^- and $C_2{}^-$.
Nucl. Instrum. Methods Phys. Res. B 266, 37 (2008)

Cs^+ + C	Sputtering	14.5 keV	Exp

1823. N. Bundaleski
Investigation of the projectile atomic number influence to the total sputtering yield in the keV energy region.
Nucl. Instrum. Methods Phys. Res. B 266, 49 (2008)

N + Al	Sputtering	2 keV	Th
Ne + Al	Sputtering	2 keV	Th
Al + Al	Sputtering	2 keV	Th
Ar + Al	Sputtering	2 keV	Th
Kr + Al	Sputtering	2 keV	Th
Xe + Al	Sputtering	2 keV	Th

1824. S. Ullah, A. H. Dogar, A. Qayyum
Monte Carlo study of ion-induced backward and forward secondary electron emission from thin Al foil.
Nucl. Instrum. Methods Phys. Res. B 266, 577 (2008)

C^+ + Al	Secondary Electron Emission	0.1−10 keV/amu	Th
Al^+ + Al	Secondary Electron Emission	0.1−10 keV/amu	Th
Ar^+ + Al	Secondary Electron Emission	0.1−10 keV/amu	Th
Cu^+ + Al	Secondary Electron Emission	0.1−10 keV/amu	Th
Kr^+ + Al	Secondary Electron Emission	0.1−10 keV/amu	Th

1825. K. Khalal-Kouache, B. Aissous, A. Mekhtiche, A. C. Chami
Effect of energy loss in the simulation of slow ion scattering by a solid surface.
Nucl. Instrum. Methods Phys. Res. B 266, 714 (2008)

He^+ + Si	Reflection	4 keV	Th
He^+ + Ni	Reflection	4 keV	Th
Li^+ + Ni	Reflection	4 keV	Th

1826. A. Mutzke, W. Eckstein
Ion fluence dependence of the Si sputtering yield by noble gas ion bombardment.
Nucl. Instrum. Methods Phys. Res. B 266, 872 (2008)

He + Si	Sputtering	1−500 keV	Th
Ne + Si	Sputtering	1−500 keV	Th
Ar + Si	Sputtering	1−500 keV	Th
Xe + Si	Sputtering	1−500 keV	Th

1827. A. Tripathi, S. A. Khan, M. Kumar, V. Baranwal, R. Krishna, S. Kumar, A. C. Pandey, D. K. Avasthi
Angular dependence of electronic sputtering from HOPG.
Nucl. Instrum. Methods Phys. Res. B 266, 1265 (2008)

Au^+ + C	Sputtering	120 MeV	Exp

1828. B. Saha, P. Chakraborty
On the emission of $MoCs^+$ molecular ions from Cs^+ irradiated molybdenum surface.
Nucl. Instrum. Methods Phys. Res. B 266, 1386 (2008)

Cs^+ + Mo	Sputtering	1−5 keV	Exp

1829. M. Hamhami, N. Djouhri, A. C. Chami, M. Richard-Viard, M. Boudjema
Molecular dissociation of $D_2{}^+$ scattered from a polycrystalline nickel surface.
Nucl. Instrum. Methods Phys. Res. B 266, 3359 (2008)

H^+ + Ni	Reflection	1−2 keV	Exp
$H_2{}^+$ + Ni	Reflection	1−2 keV	Exp
D^+ + Ni	Reflection	1−2 keV	Exp
$D_2{}^+$ + Ni	Reflection	1−2 keV	Exp

1830. A. Lawicki, P. Rousseau, A. Kowalski, Ch. Ottinger
Luminescence from low-energy impact of $H_n{}^+$ and $D_n{}^+$ ions (n = 1,2,3) on a Tore Supra carbon tile.
Nucl. Instrum. Methods Phys. Res. B 266, 3927 (2008)

$H_2{}^+$ + C	Surface Interactions	100−1000 eV	Exp
$H_3{}^+$ + C	Surface Interactions	100−1000 eV	Exp
D^+ + C	Surface Interactions	100−1000 eV	Exp
$D_2{}^+$ + C	Surface Interactions	100−1000 eV	Exp
$D_3{}^+$ + C	Surface Interactions	100−1000 eV	Exp
H^+ + C	Sputtering	100−1000 eV	Exp
$H_2{}^+$ + C	Sputtering	100−1000 eV	Exp
$H_3{}^+$ + C	Sputtering	100−1000 eV	Exp
D^+ + C	Sputtering	100−1000 eV	Exp
$D_2{}^+$ + C	Sputtering	100−1000 eV	Exp
$D_3{}^+$ + C	Sputtering	100−1000 eV	Exp

1831. G. Ruano, J. Ferron
Ion induced high energy electron emission from copper.
Nucl. Instrum. Methods Phys. Res. B 266, 4888 (2008)

He^+ + Cu	Secondary Electron Emission	1−5 keV	Exp
Li^+ + Cu	Secondary Electron Emission	1−5 keV	Exp
Ne^+ + Cu	Secondary Electron Emission	1−5 keV	Exp
Ar^+ + Cu	Secondary Electron Emission	1−5 keV	Exp

1832. M. A. Karolewski, R. G. Cavell
Secondary ion emission from Cu(100) surfaces with atomic adsorbates (N, O, Cl, S and Br).
Nucl. Instrum. Methods Phys. Res. B 266, 4959 (2008)

Ar^+ + N + Cu	Sputtering	4−5 keV	Exp
Ar^+ + O + Cu	Sputtering	4−5 keV	Exp
Ar^+ + S + Cu	Sputtering	4−5 keV	Exp
Ar^+ + Cl + Cu	Sputtering	4−5 keV	Exp
Ar^+ + Br + Cu	Sputtering	4−5 keV	Exp

1833. S. N. Samarin, J. F. Williams, A. D. Sergeant, O. M. Artamonov, H. Gollisch, R. Feder
Spin-dependent reflection of very-low-energy electrons from W(110).
Phys. Rev. B 76, 125402 (2007)

e + W	Reflection	8−21 eV	E/T
e + W	Secondary Electron Emission	8−21 eV	E/T

1834. H. K. Kim, T. S. Kim, J. Lee, S. K. Jo
Threshold behavior in kinetic electron emission from oxide insulators.
Phys. Rev. B 76, 165434 (2007)

$\mathbf{Ar^+ + SiO_2}$	Secondary Electron Emission	20−120 eV	Exp
$\mathbf{Ar^+ + MgO}$	Secondary Electron Emission	20−120 eV	Exp
$\mathbf{Ar^+ + BaO}$	Secondary Electron Emission	20−120 eV	Exp
$\mathbf{Kr^+ + SiO_2}$	Secondary Electron Emission	20−120 eV	Exp
$\mathbf{Kr^+ + MgO}$	Secondary Electron Emission	20−120 eV	Exp
$\mathbf{Kr^+ + BaO}$	Secondary Electron Emission	20−120 eV	Exp
$\mathbf{Xe^+ + SiO_2}$	Secondary Electron Emission	20−120 eV	Exp
$\mathbf{Xe^+ + MgO}$	Secondary Electron Emission	20−120 eV	Exp
$\mathbf{Xe^+ + BaO}$	Secondary Electron Emission	20−120 eV	Exp

1835. N. Bajales, J. Ferron, E. C. Goldberg
Coulomb blockade in ion-induced electron emission and neutralization mechanisms.
Phys. Rev. B 76, 245431 (2007)

$\mathbf{He^+ + Al}$	Reflection	1−5 keV	E/T
$\mathbf{Ar^+ + Al}$	Reflection	1−5 keV	E/T
$\mathbf{He^+ + Al}$	Secondary Electron Emission	1−5 keV	E/T
$\mathbf{Ar^+ + Al}$	Secondary Electron Emission	1−5 keV	E/T
$\mathbf{He^+ + Al}$	Neutraliz., Ioniz., Dissoc.	1−5 keV	E/T
$\mathbf{Ar^+ + Al}$	Neutraliz., Ioniz., Dissoc.	1−5 keV	E/T

1836. M. Tona, Y. Fujita, C. Yamada, S. Ohtani
Electronic interaction of individual slow highly charged ions with TiO_2(110).
Phys. Rev. B 77, 155427 (2007)

$\mathbf{I^{25+} + TiO_2}$	Sputtering	100−300 keV	Exp
$\mathbf{I^{30+} + TiO_2}$	Sputtering	100−300 keV	Exp
$\mathbf{I^{35+} + TiO_2}$	Sputtering	100−300 keV	Exp
$\mathbf{I^{40+} + TiO_2}$	Sputtering	100−300 keV	Exp
$\mathbf{I^{45+} + TiO_2}$	Sputtering	100−300 keV	Exp
$\mathbf{I^{50+} + TiO_2}$	Sputtering	100−300 keV	Exp

1837. S. Wethekam, D. Valdes, R. C. Monreal, H. Winter
Dynamical Auger charge transfer of noble gas atoms and metal surfaces.
Phys. Rev. B 78, 033105 (2007)

He + Al	Reflection	1−10 keV	Th
He + Al	Neutraliz., Ioniz., Dissoc.	1−10 keV	Th

1838. F. Bonetto, M. A. Romero, E. A. Garcia, R. A. Vidal, J. Ferron, E. C. Goldberg
Large neutral fractions in collisions of Li^+ with a highly oriented pyrolytic graphite surface: Resonant and Auger mechanisms.
Phys. Rev. B 78, 075422 (2007)

$\mathbf{Li^+ + C}$	Reflection	2−5 keV	Exp
$\mathbf{Li^+ + C}$	Neutraliz., Ioniz., Dissoc.	2−5 keV	Exp

1839. S. Wethekam, D. Valdes, R. C. Monreal, H. Winter
Face-dependent Auger neutralization and ground-state energy shift for He in front of Al surfaces.
Phys. Rev. B 78, 075423 (2007)

He + Al	Reflection	0.8−25 keV	E/T
He^+ + Al	Reflection	0.8−25 keV	E/T
He + Al	Neutraliz., Ioniz., Dissoc.	0.8−25 keV	E/T
He^+ + Al	Neutraliz., Ioniz., Dissoc.	0.8−25 keV	E/T

1840. E. E. Krasovskii, W. Schattke, P. Jiricek, M. Vondracek, O. V. Krasovska, V. N. Antonov, A. P. Shpak, I. Bartos
Photoemission from Al(100) and (111): Experiment and ab initio theory.
Phys. Rev. B 78, 165406 (2007)

hν + Al	Secondary Electron Emission	44−100 eV	E/T

1841. H. Paul
On the gas-solid difference in stopping power for low energy ions.
Nucl. Instrum. Methods Phys. Res. B 262, 13 (2007)

N^+ + H	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + He	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Be	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + C	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + O	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Ne	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Al	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Si	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Ar	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Ti	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Fe	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Ni	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Cu	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Ge	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Kr	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Mo	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Cd	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Sn	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Xe	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + W	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Pt	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Au	Surface Interactions	0.025−0.05 MeV/amu	E/T
N^+ + Pb	Surface Interactions	0.025−0.05 MeV/amu	E/T

1842. M. Alducin, R. Diez Muino, H. F. Busnengo, A. Salin
Dissociative adsorption of N_2 on W(110): Theoretical study of the dependence on the incidence angle.
Surf. Sci. 601, 3726 (2007)

N_2 + W	Adsorption, Desorption	0−2.5 eV	Th
N_2 + W	Neutraliz., Ioniz., Dissoc.	0−2.5 eV	Th

1843. M. Lahti, N. Nivalainen, M. Alatalo
O_2 dissociation on Pd(211) and Cu(211) surfaces.
Surf. Sci. 601, 3774 (2007)

O_2 + Cu	Adsorption, Desorption	25 MeV	Th
O_2 + Pd	Adsorption, Desorption	25 MeV	Th
O_2 + Cu	Neutraliz., Ioniz., Dissoc.	25 MeV	Th
O_2 + Pd	Neutraliz., Ioniz., Dissoc.	25 MeV	Th

1844. M. Fama, J. Shi, R. A. Baragiola
Sputtering of ice by low-energy ions.
Surf. Sci. 602, 156 (2008)

He^+ + H_2O	Sputtering	0.35−4.0 keV	Exp
Ar^+ + H_2O	Sputtering	0.35−4.0 keV	Exp

1845. X. Chen, Z. Sroubek, J. A. Yarmoff
Charge exchange between low energy Si ions and Cs adatoms.
Surf. Sci. 602, 620 (2008)

Si^+ + Al	Sputtering	2−5 keV	E/T
Si^+ + Si	Sputtering	2−5 keV	E/T
Si^+ + Cs	Sputtering	2−5 keV	E/T

1846. B. Saha, S. Sarkar, P. Chakraborty, H. Gnaser
Secondary emission of $MCs_n{}^+$ molecular ions under the joint influence of electropositive and electronegative elements.
Surf. Sci. 602, 1061 (2008)

Cs^+ + Ag	Sputtering	5 keV	Exp

1847. D. D. Neufeld, H. R. Dunham, S. Wethekam, J. C. Lancaster, F. B. Dunning
Ionization of xenon Rydberg atoms at oxidized Si(100) surfaces.
Surf. Sci. 602, 1306 (2008)

Xe + Si	Neutraliz., Ioniz., Dissoc.	300 deg K	Exp

1848. M. Novak
Monte Carlo simulation of energy loss of electrons backscattered from solid surfaces.
Surf. Sci. 602, 1458 (2008)

e + Cu	Reflection	500−3000 eV	E/T

1849. M. Johansson, O. Lytken, I. Chorkendorff
The sticking probability for H_2 in presence of CO on some transition metals at a hydrogen pressure of 1 bar.
Surf. Sci. 602, 1863 (2008)

H_2 + Co	Adsorption, Desorption	300 deg K	Exp
H_2 + Ni	Adsorption, Desorption	300 deg K	Exp
H_2 + Cu	Adsorption, Desorption	300 deg K	Exp
H_2 + Ru	Adsorption, Desorption	300 deg K	Exp
H_2 + Rh	Adsorption, Desorption	300 deg K	Exp
H_2 + Pd	Adsorption, Desorption	300 deg K	Exp
H_2 + Ir	Adsorption, Desorption	300 deg K	Exp
H_2 + Pt	Adsorption, Desorption	300 deg K	Exp
H_2 + CO + Co	Adsorption, Desorption	300 deg K	Exp
H_2 + CO + Ni	Adsorption, Desorption	300 deg K	Exp
H_2 + CO + Cu	Adsorption, Desorption	300 deg K	Exp
H_2 + CO + Ru	Adsorption, Desorption	300 deg K	Exp
H_2 + CO + Rh	Adsorption, Desorption	300 deg K	Exp
H_2 + CO + Pd	Adsorption, Desorption	300 deg K	Exp
H_2 + CO + Ir	Adsorption, Desorption	300 deg K	Exp
H_2 + CO + Pt	Adsorption, Desorption	300 deg K	Exp

1850. J. V. Ferreira, A. C. Pavao
Resonating valence bond mechanism of the H_2 dissociation on Pd surface.
Surf. Sci. 602, 1964 (2008)

H_2 + Pd	Neutraliz., Ioniz., Dissoc.	300 deg K	Th

1851. A. R. Khan, Y. Narita, A. Namiki, A. Kato, M. Suemitsu
Adsorption and abstraction of atomic hydrogen on the Si(110) surfaces.
Surf. Sci. 602, 1979 (2008)

H + Si	Adsorption, Desorption	300 deg K	Exp

1852. H. Hamoudi, C. Dablemont, V. A. Esaulov
Interaction of Li^+ with a Au(100) surface.
Surf. Sci. 602, 2486 (2008)

Li^+ + Au	Reflection	0−2.2 keV	Exp
Li^+ + Au	Neutraliz., Ioniz., Dissoc.	0−2.2 keV	Exp

1853. L. Vattuone, L. Savio, M. Okada, K. Moritani, M. Rocca
Initial sticking probability of O_2 on Cu(410).
Surf. Sci. 602, 2689 (2008)

O_2 + Cu	Adsorption, Desorption	130−800 deg K	Exp

1854. M. Tan, B. V. King
Time-of-flight mass spectra of Ni metastable excited atoms sputtered from Ni(100), Ni_3Al(100) and NiAl(110).
Surf. Sci. 602, 2713 (2008)

Ar^+ + Ni	Sputtering	4 keV	Exp
Ar^+ + NiAl	Sputtering	4 keV	Exp
Ar^+ + Ni_3Al	Sputtering	4 keV	Exp

1855. K. Pyszniak, A. Drozdziel, M. Turek, A. Wojtowicz, J. Sielanko
Secondary ion emission from Ti and Si targets induced by medium energy Ar^+ ion bombardment – Experiment and computer simulation.
Vacuum 81, 1145 (2007)

Ar^+ + Si	Sputtering	20−30 keV	E/T
Ar^+ + Ti	Sputtering	20−30 keV	E/T

1856. A. Zalar, J. Kovac, B. Pracek, P. Panjan, M. Ceh
Ion sputtering rates of C, Cr_xC_y, and Cr at different Ar^+ ion incidence angles.
Vacuum 82, 116 (2007)

Ar^+ + C	Sputtering	1 keV	Exp
Ar^+ + Cr	Sputtering	1 keV	Exp

1857. V. Stary, J. Zemek, J. Pavluch
Angular and energy distribution of backscattered electrons simulated by Monte-Carlo–Assessment by experiment I.
Vacuum 82, 121 (2007)

e + Cu	Reflection	0.2−1.0 keV	Th
e + Au	Reflection	0.2−1.0 keV	Th

1858. L. Kotis, M. Menyard, L. Toth, A. Zalar, P. Panjan
Determination of relative sputtering yield of Cr/Si.
Vacuum 82, 178 (2007)

$\mathbf{Ar^+ + Si}$	Sputtering	1 keV	Exp
$\mathbf{Ar^+ + Cr}$	Sputtering	1 keV	Exp

1859. L. Zommer, A. Jablonski, G. Gergely, S. Gurban
Monte Carlo backscattering yield (BY) calculations applying continuous slowing down approximation (CSDA) and experimental data.
Vacuum 82, 201 (2007)

e + Al	Reflection	0.2−30 keV	Exp
e + Si	Reflection	0.2−30 keV	Exp
e + Cr	Reflection	0.2−30 keV	Exp
e + Ni	Reflection	0.2−30 keV	Exp
e + Cu	Reflection	0.2−30 keV	Exp
e + Ge	Reflection	0.2−30 keV	Exp
e + Pd	Reflection	0.2−30 keV	Exp
e + Ag	Reflection	0.2−30 keV	Exp
e + Pt	Reflection	0.2−30 keV	Exp
e + Au	Reflection	0.2−30 keV	Exp

1860. F. W. Meyer, H. Zhang, M. J. Lance, H. F. Krause
Chemical sputtering and surface damage of graphite by low-energy atomic and molecular hydrogen and deuterium projectiles.
Vacuum 82, 880 (2008)

$\mathbf{H^+ + C}$	Sputtering	10−750 eV	Exp
$\mathbf{H_2{}^+ + C}$	Sputtering	10−750 eV	Exp
$\mathbf{H_3{}^+ + C}$	Sputtering	10−750 eV	Exp
$\mathbf{D^+ + C}$	Sputtering	10−750 eV	Exp
$\mathbf{D_2{}^+ + C}$	Sputtering	10−750 eV	Exp
$\mathbf{D_3{}^+ + C}$	Sputtering	10−750 eV	Exp

1861. N. N. Andrianova, A. M. Borisov, E. S. Mashkova, A. S. Nemov, E. S. Parilis
The effect of crystalline structure on molecular effect in ion-induced electron emission.
Vacuum 82, 906 (2008)

$\mathbf{N^+ + Cu}$	Secondary Electron Emission	17.5−35 keV	Exp
$\mathbf{N_2{}^+ + Cu}$	Secondary Electron Emission	17.5−35 keV	Exp

1862. W. Eckstein
Sputtering yields.
Vacuum 82, 930 (2008)

H + Ni	Sputtering	10-10^5 eV	E/T
He + Ni	Sputtering	10-10^5 eV	E/T
N + Ni	Sputtering	10-10^5 eV	E/T
O + Ni	Sputtering	10-10^5 eV	E/T
Ne + Ni	Sputtering	10-10^5 eV	E/T
Ar + Ni	Sputtering	10-10^5 eV	E/T
Ni + Ni	Sputtering	10-10^5 eV	E/T
Kr + Ni	Sputtering	10-10^5 eV	E/T
Xe + Ni	Sputtering	10-10^5 eV	E/T
D + Ni	Sputtering	10-10^5 eV	E/T
T + Ni	Sputtering	10-10^5 eV	E/T

1863. V. I. Shulga
An attempt to solve Andersen's puzzle in surface segregation during alloy sputtering.
Nucl. Instrum. Methods Phys. Res. B 266, 5107 (2008)

Ar^+ + Cu + Pt	Chemical Reactions	1−320 keV	E/T
Ar^+ + Cu + Pt	Sputtering	1−320 keV	E/T

1864. J. Brison, R. G. Vitchev, L. Houssiau
Cesium/xenon co-sputtering at different energies during ToF-SIMS depth profiling.
Nucl. Instrum. Methods Phys. Res. B 266, 5159 (2008)

Xe^+ + Si	Sputtering	250−2000 eV	Exp
Cs^+ + Si	Sputtering	250−2000 eV	Exp

1865. M. S. Gravielle, J. E. Miraglia
Influence of the polarization in grazing scattering of fast helium atoms from LiF(001) surfaces.
Phys. Rev. A 78, 022901 (2008)

He + LiF	Reflection	1 keV	Exp
He + LiF	Trapping, Detrapping	1 keV	Exp

1866. J. E. Valdes, P. Vargas, C. Celedon, E. Sanchez, L. Guillemot, V. A. Esaulov
Electronic density corrugation and crystal azimuthal orientation effects on energy losses of hydrogen ions in grazing scattering on a Ag(110) surface.
Phys. Rev. A 78, 032902 (2008)

H^- + Ag	Reflection	1−4 keV	Exp

1867. G. Andersson, H. Morgner, H. Pohl
Energy-loss straggling of helium projectiles at low kinetic energies: Deconvolution of concentration depth profiles of inorganic salt solutes in aqueous solutions.
Phys. Rev. A 78, 032904 (2008)

He + LiI	Reflection	3 keV	Exp

1868. S. A. Cruz, E. Ley-Koo, R. Cabrera-Trujillo
Ground-state energy shift of He close to a surface and its relation with the scattering potential: A confinement model.
Phys. Rev. A 78, 032905 (2008)

He + C	Reflection	100 eV	Th
He + Al	Reflection	100 eV	Th

1869. A. Rai, R. Schneider, M. Warrier, P. Roubin, C. Martin, M. Richou
Kinetic Monte-Carlo modeling of hydrogen retention and re-emission from Tore Supra deposits.
J. Nucl. Mater. 386-388, 41 (2009)

H + Fe	Trapping, Detrapping		Th
H + SS	Trapping, Detrapping		Th
H_2 + Fe	Trapping, Detrapping		Th
H_2 + SS	Trapping, Detrapping		Th

1870. M. Miyamoto, K. Ono, Y. Mori, D. Shitabou
Difference between helium retention properties in 316L and 304 stainless steels.
J. Nucl. Mater. 386-388, 181 (2009)

He^+ + Fe	Trapping, Detrapping	20 keV	Exp
He^+ + SS	Trapping, Detrapping	20 keV	Exp

1871. W. M. Shu, A. Kawasuso, T. Yamanishi
Recent findings on blistering and deuterium retention in tungsten exposed to high-fluence deuterium plasma.
J. Nucl. Mater. 386-388, 356 (2009)

H + W	Trapping, Detrapping	38 eV	Exp
D + W	Trapping, Detrapping	38 eV	Exp

1872. D. Hamaguchi, H. Iwakiri, T. Kawamura, H. Abe, T. Iwai, K. Kikuchi, N. Yoshida
The trapping behavior of deuterium in F82H ferritic/martensitic steel.
J. Nucl. Mater. 386-388, 375 (2009)

$H_2{}^+$ + Fe	Trapping, Detrapping	0.5 keV	Exp
$H_2{}^+$ + SS	Trapping, Detrapping	0.5 keV	Exp
$D_2{}^+$ + Fe	Trapping, Detrapping	0.5 keV	Exp
$D_2{}^+$ + SS	Trapping, Detrapping	0.5 keV	Exp

1873. H. Atsumi, A. Muhaimin, T. Tanabe, T. Shikama
Hydrogen trapping in neutron-irradiated graphite.
J. Nucl. Mater. 386-388, 379 (2009)

H + C	Trapping, Detrapping	300 deg K	Exp
D + C	Trapping, Detrapping	300 deg K	Exp

1874. T. Hino, Y. Katada, Y. Yamauchi, M. Akiba, S. Suzuki, T. Ezato
Deuterium retention of ferritic steel irradiated by energetic hydrogen ions.
J. Nucl. Mater. 386-388, 736 (2009)

H^+ + Fe	Trapping, Detrapping	1.7 keV	Exp
H^+ + SS	Trapping, Detrapping	1.7 keV	Exp
D^+ + Fe	Trapping, Detrapping	1.7 keV	Exp
D^+ + SS	Trapping, Detrapping	1.7 keV	Exp

1875. G. De Temmerman, R. P. Doerner
Deuterium retention and release in tungsten co-deposited layers.
J. Nucl. Mater. 389, 479 (2009)

H + W	Trapping, Detrapping	100−400 eV	Exp
D + W	Trapping, Detrapping	100−400 eV	Exp

1876. K. Ohya, Y. Kikuhara, K. Inai, A. Kirschner, D. Borodin, A. Ito, H. Nakamura, T. Tanabe
Simulation of hydrocarbon reflection from carbon and tungsten surfaces and its impact on codeposition patterns on plasma facing components.
J. Nucl. Mater. 390-391, 72 (2009)

C + W	Adsorption, Desorption	0−100 eV	Th
C^+ + W	Adsorption, Desorption	0−100 eV	Th
CH + W	Adsorption, Desorption	0−100 eV	Th
CH^+ + W	Adsorption, Desorption	0−100 eV	Th
CH_2 + W	Adsorption, Desorption	0−100 eV	Th
$CH_2{}^+$ + W	Adsorption, Desorption	0−100 eV	Th
CH_3 + W	Adsorption, Desorption	0−100 eV	Th
$CH_3{}^+$ + W	Adsorption, Desorption	0−100 eV	Th
CH_4 + W	Adsorption, Desorption	0−100 eV	Th
$CH_4{}^+$ + W	Adsorption, Desorption	0−100 eV	Th
CH_4 + W	Reflection	0−100 eV	Th
CH_4 + W	Neutraliz., Ioniz., Dissoc.	0−100 eV	Th

1877. P. S. Krstic, E. M. Hollmann, C. O. Reinhold, S. J. Stuart, R. P. Doerner, D. Nishijima, A. Yu. Pigarov
Transfer of rovibrational energies in hydrogen plasma-carbon surface interactions.
J. Nucl. Mater. 390-391, 88 (2009)

$\mathbf{H_2 + C}$	Reflection		Th

1878. H. Zhang, F. W. Meyer
Steady-state and transient hydrocarbon production in graphite by low energy impact of atomic and molecular deuterium projectiles.
J. Nucl. Mater. 390-391, 127 (2009)

$\mathbf{H^+ + C}$	Trapping, Detrapping	80−450 eV	Exp
$\mathbf{H_2^+ + C}$	Trapping, Detrapping	80−450 eV	Exp
$\mathbf{H_3^+ + C}$	Trapping, Detrapping	80−450 eV	Exp
$\mathbf{D^+ + C}$	Trapping, Detrapping	80−450 eV	Exp
$\mathbf{D_2^+ + C}$	Trapping, Detrapping	80−450 eV	Exp
$\mathbf{D_3^+ + C}$	Trapping, Detrapping	80−450 eV	Exp

1879. D. Nishijima, R. P. Doerner, M. J. Baldwin, G. De Temmerman
Erosion yields of deposited beryllium layers.
J. Nucl. Mater. 390-391, 132 (2009)

$\mathbf{H^+ + Be}$	Sputtering	5−140 eV	Exp
$\mathbf{H_2^+ + Be}$	Sputtering	5−140 eV	Exp
$\mathbf{D^+ + Be}$	Sputtering	5−140 eV	Exp
$\mathbf{D_2^+ + Be}$	Sputtering	5−140 eV	Exp

1880. A. Ito, Y. Wang, S. Irle, K. Morokuma, H. Nakamura
Molecular dynamics simulation of hydrogen atom sputtering on the surface of graphite with defect and edge.
J. Nucl. Mater. 390-391, 183 (2009)

H + C	Sputtering	2−30 eV	Th
D + C	Sputtering	2−30 eV	Th
T + C	Sputtering	2−30 eV	Th

1881. I. Cadez, S. Markelj, P. Pelicon, Z. Rupnik
Reemission of neutral hydrogen molecules from tungsten.
J. Nucl. Mater. 390-391, 520 (2009)

H + W	Reflection		Exp
$\mathbf{H_2 + W}$	Reflection		Exp
D + W	Reflection		Exp
$\mathbf{D_2 + W}$	Reflection		Exp
H + W	Trapping, Detrapping		Exp
$\mathbf{H_2 + W}$	Trapping, Detrapping		Exp
D + W	Trapping, Detrapping		Exp
$\mathbf{D_2 + W}$	Trapping, Detrapping		Exp

1882. G. M. Wright, D. G. Whyte, B. Lipschultz
Measurement of hydrogenic retention and release in molybdenum with the DION-ISOS experiment.
J. Nucl. Mater. 390-391, 544 (2009)

$\mathbf{H^+ + Mo}$	Trapping, Detrapping	30−350 eV	Exp
$\mathbf{H_2^+ + Mo}$	Trapping, Detrapping	30−350 eV	Exp
$\mathbf{D^+ + Mo}$	Trapping, Detrapping	30−350 eV	Exp
$\mathbf{D_2^+ + Mo}$	Trapping, Detrapping	30−350 eV	Exp

1883. M. Reinelt, Ch. Linsmeier
Ion implanted deuterium retention and release from clean and oxidized beryllium.
J. Nucl. Mater. 390-391, 568 (2009)

H^+ + **Be**	Trapping, Detrapping	1 keV	Exp
D^+ + **Be**	Trapping, Detrapping	1 keV	Exp

1884. M. Fukumoto, H. Kashiwagi, Y. Ohtsuka, Y. Ueda, M. Taniguchi, T. Inoue, K. Sakamoto, J. Yagyu, T. Arai, I. Takagi, T. Kawamura
Deuterium trapping in tungsten damaged by high-energy hydrogen ion irradiation.
J. Nucl. Mater. 390-391, 572 (2009)

H^+ + **W**	Trapping, Detrapping	1 keV	Exp
$H_2{}^+$ + **W**	Trapping, Detrapping	1 keV	Exp
$H_3{}^+$ + **W**	Trapping, Detrapping	1 keV	Exp
D^+ + **W**	Trapping, Detrapping	1 keV	Exp
$D_2{}^+$ + **W**	Trapping, Detrapping	1 keV	Exp
$D_3{}^+$ + **W**	Trapping, Detrapping	1 keV	Exp

1885. H. Atsumi, T. Tanabe, T. Shikama
Bulk hydrogen retention in neutron-irradiated graphite at elevated temperatures.
J. Nucl. Mater. 390-391, 581 (2009)

H + C	Trapping, Detrapping		Exp

1886. A. Airapetov, L. Begrambekov, C. Brosset, J. P. Gunn, C. Grisolia, A. Kuzmin, T. Loarer, M. Lipa, P. Monier-Garbet, P. Shigin, E. Tsitrone, A. Zakharov
Deuterium trapping in carbon fiber composites exposed to D plasma.
J. Nucl. Mater. 390-391, 589 (2009)

$H_2{}^+$ + **C**	Trapping, Detrapping	10−1000 eV	Exp
$D_2{}^+$ + **C**	Trapping, Detrapping	10−1000 eV	Exp

1887. Y. Oya, Y. Inagaki, S. Suzuki, H. Ishikawa, Y. Kikuchi, A. Yoshikawa, H. Iwakiri, N. Ashikawa, A. Sagara, N. Yoshida, K. Okuno
Behavior of hydrogen isotope retention in carbon implanted tungsten.
J. Nucl. Mater. 390-391, 622 (2009)

$H_2{}^+$ + **C**	Trapping, Detrapping	3 keV	Exp
$D_2{}^+$ + **C**	Trapping, Detrapping	3 keV	Exp

1888. O. V. Ogorodnikova
Ion-driven deuterium retention in high-Z metals.
J. Nucl. Mater. 390-391, 651 (2009)

$H_2{}^+$ + **Mo**	Trapping, Detrapping	600−3000 eV	Exp
$H_2{}^+$ + **W**	Trapping, Detrapping	600−3000 eV	Exp
$H_3{}^+$ + **Mo**	Trapping, Detrapping	600−3000 eV	Exp
$H_3{}^+$ + **W**	Trapping, Detrapping	600−3000 eV	Exp
$D_2{}^+$ + **Mo**	Trapping, Detrapping	600−3000 eV	Exp
$D_2{}^+$ + **W**	Trapping, Detrapping	600−3000 eV	Exp
$D_3{}^+$ + **Mo**	Trapping, Detrapping	600−3000 eV	Exp
$D_3{}^+$ + **W**	Trapping, Detrapping	600−3000 eV	Exp

1889. N. Matsunami, N. Ohno, M. Tokitani
Deuterium retention in tungsten oxide under low energy $D_2{}^+$ plasma exposure.
J. Nucl. Mater. 390-391, 693 (2009)

H_2^+ + WO_3	Trapping, Detrapping	1.5 keV	Exp
D_2^+ + WO_3	Trapping, Detrapping	1.5 keV	Exp

1890. T. Ono, T. Kenmotsu, T. Muramoto, T. Kawamura
Calculation of deuterium retention, re-emission and reflection from a tungsten material under D^+ ions irradiation with ACAT-DIFFUSE code.
J. Nucl. Mater. 390-391, 713 (2009)

H^+ + W	Reflection	100 eV	Th
D^+ + W	Reflection	100 eV	Th
H^+ + W	Trapping, Detrapping	100 eV	Th
D^+ + W	Trapping, Detrapping	100 eV	Th

1891. R. A. Causey, R. Doerner, H. Fraser, R. D. Kolasinski, J. Smugeresky, K. Umstadter, R. Williams
Defects in tungsten responsible for molecular hydrogen isotope retention after exposure to low energy plasmas.
J. Nucl. Mater. 390-391, 717 (2009)

H^+ + W	Trapping, Detrapping	100 eV	Exp
D^+ + W	Trapping, Detrapping	100 eV	Exp

1892. H. T. Lee, K. Krieger
Simultaneous irradiation of tungsten with deuterium and carbon at elevated temperatures.
J. Nucl. Mater. 390-391, 971 (2009)

H_3^+ + W	Sputtering	9−12 keV	Exp
D_3^+ + W	Sputtering	9−12 keV	Exp
C_2^- + W	Sputtering	9−12 keV	Exp

1893. M. Racic, K. Ibano, R. Raju, D. N. Ruzic
Physical erosion studies of plain and lithiated graphite.
J. Nucl. Mater. 3909-391, 1043 (2009)

H^+ + Li	Sputtering	500 eV	Exp
H^+ + C	Sputtering	500 eV	Exp
D^+ + Li	Sputtering	500 eV	Exp
D^+ + C	Sputtering	500 eV	Exp

1894. A. Bentabet, N. Fenineche
Backscattering coefficients for low energy positrons and electrons impinging on bulk solid targets.
J. Phys. Condens. Matter 21, 095403 (2009)

e + Al	Reflection	1−4 keV	Th
e + Cu	Reflection	1−4 keV	Th
e + Au	Reflection	1−4 keV	Th

1895. H. Kollmus, A. Kraemer, M. Bender, M. C. Bellachioma, H. Reich-Sprenger, E. Mahner, E. Hedlund, L. Westerberg, O. B. Malyshev, M. Leandersson
Energy scaling of the ion-induced desorption yield for perpendicular collisions of Ar and U with stainless steel in the energy range of 5 and 100 MeV/u.
J. Vac. Sci. Technol. A 27, 245 (2009)

Ar^{8+} + Fe	Desorption	5−100 MeV/u	Exp
Ar^{8+} + SS	Desorption	5−100 MeV/u	Exp

Ar^{9+} + **Fe**	Desorption	5−100 MeV/u	Exp
Ar^{9+} + **SS**	Desorption	5−100 MeV/u	Exp
Ar^{10+} + **Fe**	Desorption	5−100 MeV/u	Exp
Ar^{10+} + **SS**	Desorption	5−100 MeV/u	Exp
Ar^{12+} + **Fe**	Desorption	5−100 MeV/u	Exp
Ar^{12+} + **SS**	Desorption	5−100 MeV/u	Exp
U^{73+} + **Fe**	Desorption	5−100 MeV/u	Exp
U^{73+} + **SS**	Desorption	5−100 MeV/u	Exp

1896. L. A. Giannuzzi, B. P. Gorman
Particle-induced x-ray emission in stainless steel using 30 keV Ga^+ focused ion beams.
J. Vac. Sci. Technol. A 27, 668 (2009)

Ga^+ + **Fe**	Surface Interactions	30 keV	Exp
Ga^+ + **SS**	Surface Interactions	30 keV	Exp

1897. E. Hedlund, L. Westerberg, O. B. Malyshev, E. Edqvist, M. Leandersson, H. Kollmus, M. C. Bellachioma, M. Bender, A. Kraemer, H. Reich-Sprenger, B. Zajec, A. Krasnov
Ar ion induced desorption yields at the energies 5-17.7 MeV/u.
Nucl. Instrum. Methods Phys. Res. A 599, 1 (2009)

Ar^{8+} + **Fe**	Desorption	5−17.7 MeV/u	Exp
Ar^{8+} + **Cu**	Desorption	5−17.7 MeV/u	Exp
Ar^{8+} + **Ta**	Desorption	5−17.7 MeV/u	Exp
Ar^{8+} + **Au**	Desorption	5−17.7 MeV/u	Exp
Ar^{8+} + **SS**	Desorption	5−17.7 MeV/u	Exp
Ar^{9+} + **Fe**	Desorption	5−17.7 MeV/u	Exp
Ar^{9+} + **Cu**	Desorption	5−17.7 MeV/u	Exp
Ar^{9+} + **Ta**	Desorption	5−17.7 MeV/u	Exp
Ar^{9+} + **Au**	Desorption	5−17.7 MeV/u	Exp
Ar^{9+} + **SS**	Desorption	5−17.7 MeV/u	Exp
Ar^{12+} + **Fe**	Desorption	5−17.7 MeV/u	Exp
Ar^{12+} + **Cu**	Desorption	5−17.7 MeV/u	Exp
Ar^{12+} + **Ta**	Desorption	5−17.7 MeV/u	Exp
Ar^{12+} + **Au**	Desorption	5−17.7 MeV/u	Exp
Ar^{12+} + **SS**	Desorption	5−17.7 MeV/u	Exp

1898. Y. G. Li, Z. J. Ding, Z. M. Zhang, K. Tokesi
Monte Carlo calculation of electron Rutherford backscattering spectra and high-energy reflection electron energy loss spectra.
Nucl. Instrum. Methods Phys. Res. B 267, 215 (2009)

e + Al	Reflection	5−40 keV	Th
e + Mo	Reflection	5−40 keV	Th
e + Pt	Reflection	5−40 keV	Th

1899. H. Jouin, F. A. Gutierrez
$He(1s^2)$ angular distributions simulations for $He^+(1s)$ on Al(111) collisions in the keV energy range at grazing incidences.
Nucl. Instrum. Methods Phys. Res. B 267, 561 (2009)

He^+ + **Al**	Reflection	2 keV	Th

1900. Y. Kitsudo, K. Shibuya, T. Nishimura, Y. Hoshino, I. Vickridge, Y. Kido
Charge exchange of medium energy H and He ions emerging from solid surfaces.
Nucl. Instrum. Methods Phys. Res. B 267, 566 (2009)

H^+ + Ni	Reflection	5−200 keV	Exp
H^+ + Au	Reflection	5−200 keV	Exp
He^+ + Ni	Reflection	5−200 keV	Exp
He^+ + Au	Reflection	5−200 keV	Exp

1901. S. Wethekam, M. Busch, R. C. Monreal, H. Winter
Effect of spin polarization of Ni(110) surface on Auger neutralization for grazing scattering of He^+ ions.
Nucl. Instrum. Methods Phys. Res. B 267, 571 (2009)

He^+ + Ni	Neutraliz., Ioniz., Dissoc.	1.5−2.0 keV	Exp

1902. D. Primetzhofer, S. N. Markin, I. Juaristi, J. E. Valdes, P. Bauer
Analysis of the Auger neutralization of He^+ at Cu surfaces in low energy ion scattering.
Nucl. Instrum. Methods Phys. Res. B 267, 575 (2009)

He^+ + Cu	Reflection	1.5−2.0 keV	Exp

1903. A. Sindona, P. Riccardi, S. Maletta, G. Falcone
Double resonant neutralization in hyperthermal energy alkali ion scattering at clean metal surfaces.
Nucl. Instrum. Methods Phys. Res. B 267, 578 (2009)

Na^+ + Cu	Neutraliz., Ioniz., Dissoc.		Th

1904. E. Bodewits, H. M. Dang, A. J. de Nijs, D.F.A. Winters, R. Hoekstra
Atomic electron energy spectra of slow He^{2+} ions impinging on metallic surfaces.
Nucl. Instrum. Methods Phys. Res. B 267, 594 (2009)

He^{2+} + Al	Secondary Electron Emission	200−1000 eV	Exp
He^{2+} + Fe	Secondary Electron Emission	200−1000 eV	Exp
He^{2+} + Ni	Secondary Electron Emission	200−1000 eV	Exp
He^{2+} + Gd	Secondary Electron Emission	200−1000 eV	Exp

1905. B. Weidtmann, A. Duvenbeck, S. Hanke, A. Wucher
Crystallographic effects in the kinetic excitation of metal surfaces: A computational study.
Nucl. Instrum. Methods Phys. Res. B 267, 598 (2009)

Ag^+ + Ag	Surface Interactions	5 keV	Th

1906. M. S. Gravielle, J. E. Miraglia
Quantum interference in grazing scattering of swift He atoms from LiF(001) surfaces: Surface eikonal approximation.
Nucl. Instrum. Methods Phys. Res. B 267, 610 (2009)

He + LiF	Reflection	3 keV	Th

1907. M. P. Ray, R. E. Lake, C. E. Sosolik
Alkali ion scattering from Ag(001) and Ag thin films at low and hyperthermal energies.
Nucl. Instrum. Methods Phys. Res. B 267, 615 (2009)

K^+ + Si	Reflection	0.025−1.0 keV	Exp
K^+ + Ag	Reflection	0.025−1.0 keV	Exp
Cs^+ + Si	Reflection	0.025−1.0 keV	Exp
Cs^+ + Ag	Reflection	0.025−1.0 keV	Exp

1908. S. Meyer, A. Wucher
The influence of projectile charge state on ionization probabilities of sputtered atoms.
Nucl. Instrum. Methods Phys. Res. B 267, 646 (2009)

Ar + In	Sputtering	5−15 keV	Exp
Ar^+ + In	Sputtering	5−15 keV	Exp

1909. C. O. Reinhold, P. S. Krstic, S. J. Stuart
Hydrogen reflection in low-energy collisions with amorphous carbon.
Nucl. Instrum. Methods Phys. Res. B 267, 691 (2009)

H + C	Adsorption, Desorption	0.1−1000 eV	Th
H + C	Reflection	0.1−1000 eV	Th

1910. A. Golczewski, K. Dobes, G. Wachter, M. Schmid, F. Aumayr
A quartz-crystal-microbalance technique to investigate ion-induced erosion of fusion relevant surfaces.
Nucl. Instrum. Methods Phys. Res. B 267, 695 (2009)

Ar^+ + W	Sputtering	20-10^5 eV	Exp
Ar^+ + Au	Sputtering	20-10^5 eV	Exp

1911. N. Endstrasser, B. Rasul, W. Schustereder, K. Krieger, A. Kendl, P. Scheier, T. D. Maerk
Reflection properties of small hydrocarbons impinging on tungsten and carbon surfaces.
Nucl. Instrum. Methods Phys. Res. B 267, 700 (2009)

$H_2{}^+$ + C	Adsorption, Desorption	0−100 eV	Exp
$D_2{}^+$ + C	Adsorption, Desorption	0−100 eV	Exp
$CH_2{}^+$ + C	Adsorption, Desorption	0−100 eV	Exp
$CD_2{}^+$ + C	Adsorption, Desorption	0−100 eV	Exp

1912. P. S. Krstic, C. O. Reinhold, S. J. Stuart
Plasma-surface interactions of hydrogenated carbon.
Nucl. Instrum. Methods Phys. Res. B 267, 704 (2009)

H_2 + C	Sputtering	15−60 eV	Th
D_2 + C	Sputtering	15−60 eV	Th

1913. M. Bender, H. Kollmus, H. Reich-Sprenger, M. Toulemonde, W. Assmann
An inelastic thermal spike model to calculate ion induced desorption yields.
Nucl. Instrum. Methods Phys. Res. B 267, 885 (2009)

Xe^+ + Cu	Desorption	1.4 MeV/amu	Th
Xe^+ + Rh	Desorption	1.4 MeV/amu	Th
Xe^+ + Au	Desorption	1.4 MeV/amu	Th
Xe^+ + Cu	Surface Interactions	1.4 MeV/amu	Th
Xe^+ + Rh	Surface Interactions	1.4 MeV/amu	Th
Xe^+ + Au	Surface Interactions	1.4 MeV/amu	Th

1914. N. Lineva, C. Kozhuharov, S. Hagmann, M. Kraemer, G. Kraft
Low-energy electrons emitted in collisions of heavy ions with solid state targets.
Nucl. Instrum. Methods Phys. Res. B 267, 891 (2009)

C^{2+} + C	Secondary Electron Emission	1 keV; 3.6−11.4 MeV	E/T
C^{2+} + Ni	Secondary Electron Emission	1 keV; 3.6−11.4 MeV	E/T
C^{2+} + Ag	Secondary Electron Emission	1 keV; 3.6−11.4 MeV	E/T
C^{2+} + Au	Secondary Electron Emission	1 keV; 3.6−11.4 MeV	E/T
e + C	Secondary Electron Emission	1 keV; 3.6−11.4 MeV	E/T

1915. M. Kaneda, M. Shimizu, T. Hayakawa, A. Nishimura, Y. Iriki, H. Tsuchida, M. Imai, H. Shibata, A. Itoh
Mass spectrometric study of collision interactions of fast charged particles with water and NaCl solutions.
Nucl. Instrum. Methods Phys. Res. B 267, 908 (2009)

He^+ + H_2O	Sputtering	2 MeV	Exp
He^+ + NaCl	Sputtering	2 MeV	Exp

1916. M. Z. Hossain, J. B. Freund, H. T. Johnson
Improved calculation of Si sputter yield via first principles derived interatomic potential.
Nucl. Instrum. Methods Phys. Res. B 267, 1061 (2009)

Ar^+ + Si	Sputtering	0.5−1.0 keV	Th

1917. M. Ait El Fqih, P.-G. Fournier
Optical emission from Be, Cu and CuBe targets during ion beam sputtering.
Nucl. Instrum. Methods Phys. Res. B 267, 1206 (2009)

Kr^+ + Be	Sputtering	5 keV	Exp
Kr^+ + Cu	Sputtering	5 keV	Exp
Kr^+ + CuBe	Sputtering	5 keV	Exp

1918. A. Inouye, S. Yamamoto, S. Nagata, M. Yoshikawa, T. Shikama
Hydrogen retention induced by ion implantation in tungsten trioxide films.
Nucl. Instrum. Methods Phys. Res. B 267, 1480 (2009)

$H_2{}^+$ + WO_3	Trapping, Detrapping	10 keV	Exp

1919. T. Kenmotsu, M. Wada, T. Hyakutake, T. Muramoto, M. Nishida
Enhanced sputtering yields of carbon due to accumulation of low-energy Xe ions.
Nucl. Instrum. Methods Phys. Res. B 267, 1717 (2009)

Xe^+ + C	Sputtering	30−1000 eV	Th
Xe^+ + Mo	Sputtering	30−1000 eV	Th

1920. M. Pisarra, M. Commisso, A. Sindona, P. Riccardi, Z. Sroubek
Kinetic electron emission from metal surfaces by slow Na^+ ions.
Nucl. Instrum. Methods Phys. Res. B 267, 1721 (2009)

Na^+ + Al	Secondary Electron Emission	200−1000 eV	E/T
Na^+ + Au	Secondary Electron Emission	200−1000 eV	E/T

1921. A.-G. Xie, H.-F. Zhao, B. Song, Y.-J. Pei
The formula for the secondary electron yield at high incident electron energy from silver and copper.
Nucl. Instrum. Methods Phys. Res. B 267, 1761 (2009)

e + Cu	Secondary Electron Emission	10−100 keV	Th
e + Ag	Secondary Electron Emission	10−100 keV	Th

1922. T. Bernhard, H. Winter
Electron emission induced by grazing impact of H^+ and He^+ ions on a Cu(001) surface: Low-energy electron diffraction study.
Phys. Rev. B 79, 033411 (2009)

H^+ + Cu	Secondary Electron Emission	30 keV	Exp
He^+ + Cu	Secondary Electron Emission	30 keV	Exp

1923. G. Fan, J. R. Manson
Theory of direct scattering, trapping, and desorption in atom-surface collisions.
Phys. Rev. B 79, 045424 (2009)

Ar + W	Adsorption, Desorption	1−63 MeV	Th
Ar + W	Reflection	1−63 MeV	Th

1924. J. Lee, Z. Zhang, J. T. Yates Jr.
Electron-stimulated positive-in desorption caused by charge transfer from adsorbate to substrate: Oxygen adsorbed on $TiO_2(110)$.
Phys. Rev. B 79, 081408 (2009)

e + TiO_2	Desorption	20−45 eV	Exp
e + TiO_2	Sputtering	20−45 eV	Exp

1925. S. Wethekam, H. Winter, D. Valdes, R. C. Monreal
Ionization of He atoms during grazing scattering from a metal surface.
Phys. Rev. B 79, 195408 (2009)

He + Al	Reflection	2−8 keV	Th
He + Al	Neutraliz., Ioniz., Dissoc.	2−8 keV	Th

1926. Y. Rosandi, A. Redinger, T. Michely, H. M. Urbassek
Influence of a single adatom on sputtering at grazing incidence - A molecular-dynamics case study of 5 keV Ar impact on Pt(111).
Surf. Sci. 603, 320 (2009)

Ar + Pt	Sputtering	5 keV	Th

1927. E. A. Garcia, M. A. Romero, C. Gonzalez, E. C. Goldberg
Neutralization of Li^+ ions scattered by the Cu (100) and (111) surfaces: A localized picture of the atom-surface interaction.
Surf. Sci. 603, 597 (2009)

Li^+ + Cu	Reflection	200−1800 eV	Th
Li^+ + Cu	Neutraliz., Ioniz., Dissoc.	200−1800 eV	Th

1928. B. Bahrim, S. Yu, B. Makarenko, J. W. Rabalais
Electron dynamics in $H^-/Na/Cu(111)$ collisions.
Surf. Sci. 603, 703 (2009)

H^- + Na + Cu	Reflection	2 keV	E/T
H^- + Cu	Reflection	2 keV	E/T
H^- + Na + Cu	Neutraliz., Ioniz., Dissoc.	2 keV	E/T
H^- + Cu	Neutraliz., Ioniz., Dissoc.	2 keV	E/T

1929. J. P. Oh, T. Kondo, D. Hatake, J. Nakamurua
Elastic and inelastic scattering components in the angular intensity distribution of He scattered from graphite.
Surf. Sci. 603, 895 (2009)

He + C	Reflection	63 MeV	Exp

1930. M. Busch, S. Wethekam, H. Winter
Reexamination of local spin polarization at surfaces probed by hollow atoms.
Phys. Rev. A 78, 010901 (2008)

He^{2+} + O	Reflection	64−500 eV	Exp
He^{2+} + Ni	Reflection	64−500 eV	Exp
He^{2+} + NiO	Reflection	64−500 eV	Exp
He^{2+} + O	Neutraliz., Ioniz., Dissoc.	64−500 eV	Exp
He^{2+} + Ni	Neutraliz., Ioniz., Dissoc.	64−500 eV	Exp
He^{2+} + NiO	Neutraliz., Ioniz., Dissoc.	64−500 eV	Exp

3.4 Data Collection, Bibliographic and Progress Report

1931. M. Mattioli, G. Mazzitelli, M. Finkenthal, P. Mazzotta, K. B. Fournier, J. Kaastra, M. E. Puiatti
Updating of ionization data for ionization balance evaluations of atoms and ions for the elements hydrogen to germanium.
J. Phys. B 40, 3569 (2007)

e + H	Data Collection, Bibliography	0−2000 eV	E/T
e + He	Data Collection, Bibliography	0−2000 eV	E/T
e + Li	Data Collection, Bibliography	0−2000 eV	E/T
e + Be	Data Collection, Bibliography	0−2000 eV	E/T
e + B	Data Collection, Bibliography	0−2000 eV	E/T
e + C	Data Collection, Bibliography	0−2000 eV	E/T
e + N	Data Collection, Bibliography	0−2000 eV	E/T
e + O	Data Collection, Bibliography	0−2000 eV	E/T
e + F	Data Collection, Bibliography	0−2000 eV	E/T
e + Ne	Data Collection, Bibliography	0−2000 eV	E/T
e + Na	Data Collection, Bibliography	0−2000 eV	E/T
e + Mg	Data Collection, Bibliography	0−2000 eV	E/T
e + Al	Data Collection, Bibliography	0−2000 eV	E/T
e + Si	Data Collection, Bibliography	0−2000 eV	E/T
e + P	Data Collection, Bibliography	0−2000 eV	E/T
e + S	Data Collection, Bibliography	0−2000 eV	E/T
e + Cl	Data Collection, Bibliography	0−2000 eV	E/T
e + Ar	Data Collection, Bibliography	0−2000 eV	E/T
e + K	Data Collection, Bibliography	0−2000 eV	E/T
e + Ca	Data Collection, Bibliography	0−2000 eV	E/T
e + Sc	Data Collection, Bibliography	0−2000 eV	E/T
e + Ti	Data Collection, Bibliography	0−2000 eV	E/T
e + V	Data Collection, Bibliography	0−2000 eV	E/T
e + Cr	Data Collection, Bibliography	0−2000 eV	E/T
e + Mn	Data Collection, Bibliography	0−2000 eV	E/T
e + Fe	Data Collection, Bibliography	0−2000 eV	E/T
e + Co	Data Collection, Bibliography	0−2000 eV	E/T
e + Ni	Data Collection, Bibliography	0−2000 eV	E/T
e + Cu	Data Collection, Bibliography	0−2000 eV	E/T
e + Zn	Data Collection, Bibliography	0−2000 eV	E/T
e + Ga	Data Collection, Bibliography	0−2000 eV	E/T
e + Ge	Data Collection, Bibliography	0−2000 eV	E/T

1932. K. P. Dere, E. Landi, P. R. Young, G. Del Zanna, M. Landini, H. E. Mason
CHIANTI - An atomic database for emission lines.
Astron. Astrophys. 498, 915 (2009)

e + H	Data Collection, Bibliography		E/T
e + He	Data Collection, Bibliography		E/T
e + Li	Data Collection, Bibliography		E/T
e + Be	Data Collection, Bibliography		E/T

e + B	Data Collection, Bibliography	E/T
e + C	Data Collection, Bibliography	E/T
e + N	Data Collection, Bibliography	E/T
e + O	Data Collection, Bibliography	E/T
e + F	Data Collection, Bibliography	E/T
e + Ne	Data Collection, Bibliography	E/T
e + Na	Data Collection, Bibliography	E/T
e + Mg	Data Collection, Bibliography	E/T
e + Al	Data Collection, Bibliography	E/T
e + Si	Data Collection, Bibliography	E/T
e + P	Data Collection, Bibliography	E/T
e + S	Data Collection, Bibliography	E/T
e + Cl	Data Collection, Bibliography	E/T
e + Ar	Data Collection, Bibliography	E/T
e + K	Data Collection, Bibliography	E/T
e + Ca	Data Collection, Bibliography	E/T
e + Sc	Data Collection, Bibliography	E/T
e + Ti	Data Collection, Bibliography	E/T
e + V	Data Collection, Bibliography	E/T
e + Cr	Data Collection, Bibliography	E/T
e + Mn	Data Collection, Bibliography	E/T
e + Fe	Data Collection, Bibliography	E/T
e + Co	Data Collection, Bibliography	E/T
e + Ni	Data Collection, Bibliography	E/T
e + Cu	Data Collection, Bibliography	E/T
e + Zn	Data Collection, Bibliography	E/T

1933. P. Bryans, E. Landi, D. W. Savin
A new approach to analyzing solar coronal spectra and updated collisional ionization equilibrium calculations. II. Updated ionization rate coefficients.
Astrophys. J. 691, 1540 (2009)

e + H	Data Collection, Bibliography	10^4-10^9 K	Th
e + He	Data Collection, Bibliography	10^4-10^9 K	Th
e + Li	Data Collection, Bibliography	10^4-10^9 K	Th
e + Be	Data Collection, Bibliography	10^4-10^9 K	Th
e + B	Data Collection, Bibliography	10^4-10^9 K	Th
e + C	Data Collection, Bibliography	10^4-10^9 K	Th
e + N	Data Collection, Bibliography	10^4-10^9 K	Th
e + O	Data Collection, Bibliography	10^4-10^9 K	Th
e + F	Data Collection, Bibliography	10^4-10^9 K	Th
e + Ne	Data Collection, Bibliography	10^4-10^9 K	Th
e + Na	Data Collection, Bibliography	10^4-10^9 K	Th
e + Mg	Data Collection, Bibliography	10^4-10^9 K	Th
e + Al	Data Collection, Bibliography	10^4-10^9 K	Th
e + Si	Data Collection, Bibliography	10^4-10^9 K	Th
e + P	Data Collection, Bibliography	10^4-10^9 K	Th
e + S	Data Collection, Bibliography	10^4-10^9 K	Th
e + Cl	Data Collection, Bibliography	10^4-10^9 K	Th
e + Ar	Data Collection, Bibliography	10^4-10^9 K	Th
e + K	Data Collection, Bibliography	10^4-10^9 K	Th
e + Ca	Data Collection, Bibliography	10^4-10^9 K	Th
e + Sc	Data Collection, Bibliography	10^4-10^9 K	Th
e + Ti	Data Collection, Bibliography	10^4-10^9 K	Th
e + V	Data Collection, Bibliography	10^4-10^9 K	Th
e + Cr	Data Collection, Bibliography	10^4-10^9 K	Th
e + Mn	Data Collection, Bibliography	10^4-10^9 K	Th

e + Fe	Data Collection, Bibliography	10^4-10^9 K	Th
e + Co	Data Collection, Bibliography	10^4-10^9 K	Th
e + Ni	Data Collection, Bibliography	10^4-10^9 K	Th
e + Cu	Data Collection, Bibliography	10^4-10^9 K	Th
e + Zn	Data Collection, Bibliography	10^4-10^9 K	Th

1934. R. K. Smith, G.-X. Chen, K. Kirby, N. S. Brickhouse
A new calculation of Ne IX line diagnostics.
Astrophys. J. 700, 679 (2009)

e + Ne^{8+}	Data Collection, Bibliography	10^6 K	Th

3.5 Fusion Research of General Interest

1935. O. Marchuk, G. Bertschinger, H.-J. Kunze, A. Urnov, F. Goryaev, TEXTOR Team
Recombination mechanisms in He-like argon spectra measured in low-density plasmas.
J. Phys. B 40, 4403 (2007)

plasma + Ar^{16+}	Fusion Research of Gen. Interest		Exp

1936. U. Feldman, E. Landi, G. A. Doschek
Line intensity ratios in the EIS range sensitive to electron densities in 10^7 K plasmas.
Astrophys. J. 679, 843 (2008)

Ti ions	Fusion Research of Gen. Interest	200 Å	Th
Cr ions	Fusion Research of Gen. Interest	200 Å	Th
Mn ions	Fusion Research of Gen. Interest	200 Å	Th

3.6 Particle Beam-Matter Interactions

1937. S. Heredia-Avalos, I. Abril, C. D. Denton, R. Garcia-Molina
Simulation of swift boron clusters traversing amorphous carbon foils.
Phys. Rev. A 75, 012901 (2007)

$B_2{}^+$ + C	Part. Beam-Matter Interaction	10−5000 keV/u	Th
$B_3{}^+$ + C	Part. Beam-Matter Interaction	10−5000 keV/u	Th
$B_4{}^+$ + C	Part. Beam-Matter Interaction	10−5000 keV/u	Th
$B_5{}^+$ + C	Part. Beam-Matter Interaction	10−5000 keV/u	Th
$B_6{}^+$ + C	Part. Beam-Matter Interaction	10−5000 keV/u	Th
$B_{14}{}^+$ + C	Part. Beam-Matter Interaction	10−5000 keV/u	Th

1938. G. A. Bocan, N. R. Arista, J. E. Miraglia
Plasmon excitation by slow ions.
Phys. Rev. A 75, 012902 (2007)

H^+ + Al	Part. Beam-Matter Interaction	0.1−5 a.u.	Th

1939. Z. D. Pesic, Gy. Vikor, S. Atanassova, J. Anton, S. Leontein, M. Bjoerkhage, A. Paal, H. Hanafy, R. Schuch
Relaxation of slow highly charged ions hitting thin metallic foils.
Phys. Rev. A 75, 012903 (2007)

$\mathbf{Pb^{53+} + Ta}$	Part. Beam-Matter Interaction	450−1363 keV	E/T
$\mathbf{Pb^{54+} + Ta}$	Part. Beam-Matter Interaction	450−1363 keV	E/T
$\mathbf{Pb^{55+} + Ta}$	Part. Beam-Matter Interaction	450−1363 keV	E/T
$\mathbf{Pb^{56+} + Ta}$	Part. Beam-Matter Interaction	450−1363 keV	E/T
$\mathbf{Pb^{57+} + Ta}$	Part. Beam-Matter Interaction	450−1363 keV	E/T
$\mathbf{Pb^{58+} + Ta}$	Part. Beam-Matter Interaction	450−1363 keV	E/T

1940. Y. Takahashi, T. Hattori, N. Hayashizaki
Energy loss of slow carbon cluster ions in thin carbon foils.
Phys. Rev. A 75, 013202 (2007)

$\mathbf{C_{17}{}^{+} + C}$	Part. Beam-Matter Interaction	1.5−40 keV/u	E/T
$\mathbf{C_{2}{}^{+} + C}$	Part. Beam-Matter Interaction	1.5−40 keV/u	E/T
$\mathbf{C_{3}{}^{+} + C}$	Part. Beam-Matter Interaction	1.5−40 keV/u	E/T
$\mathbf{C_{5}{}^{+} + C}$	Part. Beam-Matter Interaction	1.5−40 keV/u	E/T
$\mathbf{C_{10}{}^{+} + C}$	Part. Beam-Matter Interaction	1.5−40 keV/u	E/T
$\mathbf{C_{13}{}^{+} + C}$	Part. Beam-Matter Interaction	1.5−40 keV/u	E/T
$\mathbf{C_{21}{}^{+} + C}$	Part. Beam-Matter Interaction	1.5−40 keV/u	E/T

1941. C. C. Montanari, J. E. Miraglia, S. Heredia-Avalos, R. Garcia-Molina, I. Abril
Calculation of energy-loss straggling of C, Al, Si, and Cu for fast H, He, and Li ions.
Phys. Rev. A 75, 022903 (2007)

$\mathbf{H^{+} + C}$	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th
$\mathbf{H^{+} + Al}$	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th
$\mathbf{H^{+} + Si}$	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th
$\mathbf{He^{+} + C}$	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th
$\mathbf{He^{+} + Al}$	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th
$\mathbf{He^{+} + Si}$	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th
$\mathbf{Li^{+} + C}$	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th
$\mathbf{Li^{+} + Al}$	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th
$\mathbf{Li^{+} + Si}$	Part. Beam-Matter Interaction	0.01−10 MeV/u	Th

1942. A. R. Milosavljevic, Gy. Vikor, Z. D. Pesic, P. Kolarz, D. Sevic, B. P. Marinkovic, S. Matefi-Tempfli, M. Matefi-Tempfli, L. Piraux
Guiding of low-energy electrons by highly ordered Al_2O_3 nanocapillaries.
Phys. Rev. A 75, 030901 (2007)

$\mathbf{e + Al_2O_3}$	Part. Beam-Matter Interaction	200−350 eV	Exp

1943. M. Seliger, C. O. Reinhold, T. Minami, D. R. Schultz, M. S. Pindzola, S. Yoshida, J. Burgdorfer, E. Lamour, J.-P. Rozet, D. Vernhet
Electron capture and electron transport by fast ions penetrating solids: An open quantum system approach with sources and sinks.
Phys. Rev. A 75, 032714 (2007)

$\mathbf{Ar^{18+} + C}$	Part. Beam-Matter Interaction	13.6 MeV/u	E/T

1944. G. Andersson
Energy-loss straggling of helium projectiles at low kinetic energies.
Phys. Rev. A 75, 032901 (2007)

$\mathbf{He^{+} + H_2O}$	Part. Beam-Matter Interaction	3 keV	Exp
$\mathbf{He^{+} + LiCl}$	Part. Beam-Matter Interaction	3 keV	Exp

1945. M. Quijada, A. G. Borisov, I. Nagy, R. Diez Muino, P. M. Echenique
Time-dependent density-functional calculation of the stopping power for protons and antiprotons in metals.
Phys. Rev. A 75, 042902 (2007)

H^+ + Al	Part. Beam-Matter Interaction	0.2−6 v (a.u.)	Th

1946. A. J. Garcia, J. E. Miraglia
Total electron yields and stopping power of protons colliding with NaCl-type insulator surfaces.
Phys. Rev. A 75, 042904 (2007)

H^+ + LiF	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + NaCl	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + KCl	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + NaF	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + LiCl	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + NaI	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + RbF	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + RbCl	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + RbBr	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + RbI	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + KI	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + LiI	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + KF	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + KBr	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + LiBr	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th
H^+ + NaBr	Part. Beam-Matter Interaction	2−6 v (a.u.)	Th

1947. S. Heredia-Avalos, R. Garcia-Molina, I. Abril
Energy-loss calculation of swift $C_n{}^+$ (n = 2–60) clusters through thin foils.
Phys. Rev. A 76, 012901 (2007)

C^+ + C	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
C^+ + Al	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
C^+ + Si	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_{60}{}^+$ + C	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_{60}{}^+$ + Al	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_{60}{}^+$ + Si	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_{20}{}^+$ + C	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_{20}{}^+$ + Al	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_{20}{}^+$ + Si	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_{28}{}^+$ + C	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_{28}{}^+$ + Al	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_{28}{}^+$ + Si	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_{36}{}^+$ + C	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_{36}{}^+$ + Al	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_{36}{}^+$ + Si	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_2{}^+$ + C	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_2{}^+$ + Al	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_2{}^+$ + Si	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_3{}^+$ + C	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_3{}^+$ + Al	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_3{}^+$ + Si	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_5{}^+$ + C	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_5{}^+$ + Al	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$C_5{}^+$ + Si	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th

$\mathbf{C_8^+ + C}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_8^+ + Al}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_8^+ + Si}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_{10}^+ + C}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_{10}^+ + Al}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_{10}^+ + Si}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_4^+ + C}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_4^+ + Al}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_4^+ + Si}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_7^+ + C}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_7^+ + Al}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_7^+ + Si}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_6^+ + C}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_6^+ + Al}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_6^+ + Si}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_{50}^+ + C}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_{50}^+ + Al}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th
$\mathbf{C_{50}^+ + Si}$	Part. Beam-Matter Interaction	0.3−6 MeV/u	Th

1948. M. S. Gravielle, I. Aldazabal, A. Arnau, V. H. Ponce, J. E. Miraglia, F. Aumayr, S. Lederer, H. Winter
Electron emission and energy loss in grazing collisions of protons with insulator surfaces.
Phys. Rev. A 76, 012904 (2007)

$\mathbf{H^+ + LiF}$	Part. Beam-Matter Interaction	100−300 keV	E/T
$\mathbf{H^+ + KCl}$	Part. Beam-Matter Interaction	100−300 keV	E/T
$\mathbf{H^+ + KI}$	Part. Beam-Matter Interaction	100−300 keV	E/T

1949. S. Heredia-Avalos, R. Garcia-Molina
Reduction of the energy loss of swift molecular ions in solids due to vicinage effects in the charge state.
Phys. Rev. A 76, 032902 (2007)

$\mathbf{N_2^+ + C}$	Part. Beam-Matter Interaction	0.3−1.8 MeV/u	Th
$\mathbf{O_2^+ + C}$	Part. Beam-Matter Interaction	0.3−1.8 MeV/u	Th
$\mathbf{C_{60}^+ + C}$	Part. Beam-Matter Interaction	0.3−1.8 MeV/u	Th

1950. L. N. Serkovic, E. A. Sanchez, O. Grizzi, J. C. Eckardt, G. H. Lantschner, N. R. Arista
Stopping power of fluorides for low-velocity protons.
Phys. Rev. A 76, 040901 (2007)

$\mathbf{H^+ + AlF_3}$	Part. Beam-Matter Interaction	0.7−25 keV	Th

1951. S. Das, B. S. Dassanayake, M. Winkworth, J. L. Baran, N. Stolterfoht, J. A. Tanis
Inelastic guiding of electrons in polymer nanocapillaries.
Phys. Rev. A 76, 042716 (2007)

e + PET	Part. Beam-Matter Interaction	500−1000 eV	Exp
$\mathbf{e + C_{10}H_8O_4}$	Part. Beam-Matter Interaction	500−1000 eV	Exp

1952. M. S. Gravielle, M. Alducin, J. I. Juaristi, V. M. Silkin
3d-shell contribution to the energy loss of protons during grazing scattering from Cu(111) surfaces.
Phys. Rev. A 76, 044901 (2007)

$\mathbf{H^+ + Cu}$	Part. Beam-Matter Interaction	100 keV	Th
$\mathbf{H^+ + Cu(_{111})}$	Part. Beam-Matter Interaction	100 keV	Th

1953. R. C. Fadanelli, P. L. Grande, G. Schiwietz
Impact-parameter dependence of the energy loss of fast molecular clusters in hydrogen.
Phys. Rev. A 77, 032902 (2007)

$\mathbf{H_2^{2+} + H}$	Part. Beam-Matter Interaction	150−1000 keV/amu	E/T
$\mathbf{He_2^{4+} + H}$	Part. Beam-Matter Interaction	150−1000 keV/amu	E/T
$\mathbf{Li_2^{6+} + H}$	Part. Beam-Matter Interaction	150−1000 keV/amu	E/T

1954. O. V. Bogdanov, K. B. Korotchenko, Yu. L. Pivovarov
Peculiarities of channelling radiation spectra from 100 to 800 MeV electrons and positrons in (111) Si crystal.
J. Phys. B 41, 055004 (2008)

e + Si	Part. Beam-Matter Interaction	100−800 MeV	Th

1955. A. B. Voitkiv, B. Najjari, A. Surzhykov
Charge states and effective loss cross sections for 33 TeV lead ions penetrating aluminum and gold foils.
J. Phys. B 41, 111001 (2008)

$\mathbf{Pb^{81+} + Au}$	Part. Beam-Matter Interaction	33 TeV	Th
$\mathbf{Pb^{82+} + Au}$	Part. Beam-Matter Interaction	33 TeV	Th

1956. S. Heredia-Avalos, I. Abril, C. D. Denton, J. C. Moreno-Marin, R. Garcia-Molina
Target inner-shells contributions to the stopping power and straggling for H and He ions in gold.
J. Phys. Condens. Matter 19, 466205 (2007)

$\mathbf{H^+ + Au}$	Part. Beam-Matter Interaction	1-10^5 keV/u	Th
$\mathbf{He^+ + Au}$	Part. Beam-Matter Interaction	1-10^5 keV/u	Th

1957. A. Mangiarotti, M. I. Lopes, M. L. Benabderrahmane, V. Chepel, A. Lindote, J. Pinto da Conha, P. Sona
A survey of energy loss calculations for heavy ions between 1 and 100 kev.
Nucl. Instrum. Methods Phys. Res. A 580, 114 (2007)

$\mathbf{Si^+ + Si}$	Part. Beam-Matter Interaction	1−100 keV	E/T
$\mathbf{Ar^+ + Ar}$	Part. Beam-Matter Interaction	1−100 keV	E/T
$\mathbf{Ge^+ + Ge}$	Part. Beam-Matter Interaction	1−100 keV	E/T
$\mathbf{Xe^+ + Xe}$	Part. Beam-Matter Interaction	1−100 keV	E/T

1958. A. Akkerman, J. Barak
Partitioning to elastic and inelastic processes of the energy deposited by low energy ions in silicon detectors.
Nucl. Instrum. Methods Phys. Res. B 260, 529 (2007)

$\mathbf{H^+ + Si}$	Part. Beam-Matter Interaction	15−100 keV	Th
$\mathbf{B^+ + Si}$	Part. Beam-Matter Interaction	15−100 keV	Th
$\mathbf{Si^+ + Si}$	Part. Beam-Matter Interaction	15−100 keV	Th
$\mathbf{P^+ + Si}$	Part. Beam-Matter Interaction	15−100 keV	Th
$\mathbf{Ar^+ + Si}$	Part. Beam-Matter Interaction	15−100 keV	Th
$\mathbf{As^+ + Si}$	Part. Beam-Matter Interaction	15−100 keV	Th
$\mathbf{Kr^+ + Si}$	Part. Beam-Matter Interaction	15−100 keV	Th

1959. C. O. Reinhold, M. Seliger, T. Minami, D. R. Schultz, J. Burgdorfer, E. Lamour, J.-P. Rozet, D. Vernhet
Quantum and classical transport of excited states of ions.
Nucl. Instrum. Methods Phys. Res. B 261, 125 (2007)

H^{-} + C	Part. Beam-Matter Interaction	60−800 MeV/u	Th
Ar^{18+} + C	Part. Beam-Matter Interaction	60−800 MeV/u	Th
Kr^{35+} + C	Part. Beam-Matter Interaction	60−800 MeV/u	Th

1960. K. Kitanovski, G. Braunstein
A simplified Monte-Carlo calculation to model ion-solid interactions in the classroom.
Nucl. Instrum. Methods Phys. Res. B 261, 255 (2007)

B^{+} + Si	Part. Beam-Matter Interaction	10−200 keV	Th
P^{+} + Si	Part. Beam-Matter Interaction	10−200 keV	Th

1961. N. P. Barradas
Calculation of the low energy yield in RBS.
Nucl. Instrum. Methods Phys. Res. B 261, 418 (2007)

He^{+} + Au	Part. Beam-Matter Interaction	1 MeV	Th

1962. N. P. Barradas, R. P. Pezzi, I.J.R. Baumvol
Use of the gamma function for straggling in simulation of RBS spectra.
Nucl. Instrum. Methods Phys. Res. B 261, 422 (2007)

He^{+} + Si	Part. Beam-Matter Interaction	1.5 MeV	Th
He^{+} + SiO_2	Part. Beam-Matter Interaction	1.5 MeV	Th

1963. R. Greco, A. Luce, Y. Wang, L. Shao
A technique to measure stopping power difference between channeled and non-channeled ions in crystalline solids.
Nucl. Instrum. Methods Phys. Res. B 261, 538 (2007)

He^{+} + Si	Part. Beam-Matter Interaction	1−10 MeV	Exp

1964. H. Paul
New developments in stopping power for fast ions.
Nucl. Instrum. Methods Phys. Res. B 261, 1176 (2007)

Li^{+} + Ag	Part. Beam-Matter Interaction	10^{-3}-10 MeV	E/T
Li^{+} + SiO_2	Part. Beam-Matter Interaction	10^{-3}-10 MeV	E/T
C^{+} + C	Part. Beam-Matter Interaction	10^{-3}-10 MeV	E/T

1965. Y. Zhang, J. Jensen, G. Possnert, D. A. Grove, I.-T. Bae, W. J. Weber
Stopping power measurements of He ions in Si and SiC by time-of-flight spectrometry.
Nucl. Instrum. Methods Phys. Res. B 261, 1180 (2007)

He^{+} + Si	Part. Beam-Matter Interaction	0−700 keV/amu	E/T
He^{+} + SiC	Part. Beam-Matter Interaction	0−700 keV/amu	E/T

1966. J. Y. Hsu, Y. C. Yu, K. M. Chen
The stopping forces of small cluster ions of Li and C with MeV energies in carbon foils.
Nucl. Instrum. Methods Phys. Res. B 261, 1188 (2007)

Li^{+} + C	Part. Beam-Matter Interaction	1−6 MeV	Exp
C^{+} + C	Part. Beam-Matter Interaction	1−6 MeV	Exp
$Li_2{}^{+}$ + C	Part. Beam-Matter Interaction	1−6 MeV	Exp
$C_2{}^{+}$ + C	Part. Beam-Matter Interaction	1−6 MeV	Exp
$C_3{}^{+}$ + C	Part. Beam-Matter Interaction	1−6 MeV	Exp

1967. M. A. Bernal, J. A. Liendo
Inelastic-collision cross sections for the interactions of totally stripped H, He and C ions with liquid water.
Nucl. Instrum. Methods Phys. Res. B 262, 1 (2007)

$\mathbf{H^+ + H_2O}$	Part. Beam-Matter Interaction	0.3−10 MeV/amu	Th
$\mathbf{He^{2+} + H_2O}$	Part. Beam-Matter Interaction	0.3−10 MeV/amu	Th
$\mathbf{C^{6+} + H_2O}$	Part. Beam-Matter Interaction	0.3−10 MeV/amu	Th

1968. H. Erramli, O. Elbounagui, M. A. Misdaq, A. Merzouki
A Monte Carlo computer code for evaluating energy loss of 10 keV to 10 MeV ions in amorphous silicon materials.
Nucl. Instrum. Methods Phys. Res. B 263, 127 (2007)

$\mathbf{H^+ + Si}$	Part. Beam-Matter Interaction	10^{-2}-10 MeV	Th

1969. A. A. Golubev, A. V. Kantsyrev, V. E. Luckjashin, A. Fertman, A. V. Kunin, V. V. Vatulin, A. S. Gnutov, Y. V. Panova, H. Iwase, E. Mustafin, D. Schardt, K. Weyrich, N. M. Sobolevskiy, L. N. Latysheva
Measurement of the energy deposition profile for ^{238}U ions with specific energy 500 and 950 MeV/u in stainless steel and copper targets.
Nucl. Instrum. Methods Phys. Res. B 263, 339 (2007)

$\mathbf{U^+ + Fe}$	Part. Beam-Matter Interaction	500−950 MeV/u	Exp
$\mathbf{U^+ + Cu}$	Part. Beam-Matter Interaction	500−950 MeV/u	Exp
$\mathbf{U^+ + SS}$	Part. Beam-Matter Interaction	500−950 MeV/u	Exp

1970. R. Linares, J. A. Freire, R. V. Ribas, N. H. Medina, J.R.B. Oliveira, E. W. Cybulska, W. A. Seale, N. Added, M.A.G. Silveira, K. T. Wiedemann
Stopping power of Au for Cu ions with energies below Bragg's peak.
Nucl. Instrum. Methods Phys. Res. B 263, 345 (2007)

$\mathbf{Cu^+ + Au}$	Part. Beam-Matter Interaction	6−25 MeV	Exp

1971. P. Sigmund, A. Schinner
Z_2 structure and gas-solid effect in the stopping of slow ions.
Nucl. Instrum. Methods Phys. Res. B 263, 349 (2007)

$\mathbf{H^+ + A}$	Part. Beam-Matter Interaction		Th
$\mathbf{Li^+ + A}$	Part. Beam-Matter Interaction		Th
$\mathbf{N^+ + A}$	Part. Beam-Matter Interaction		Th
$\mathbf{O^+ + A}$	Part. Beam-Matter Interaction		Th
$\mathbf{U^+ + A}$	Part. Beam-Matter Interaction		Th

1972. R. Meharchand, H. Akimune, A. M. van den Berg, Y. Fujita, W. Fujiwara, S. Gales, M. N. Harakeh, H. Hashimoto, R. Hayami, G. W. Hitt, M. Itoh, T. Kawabata, K. Kawase, M. Kinoshita, K. Nakanishi, S. Nakayama, S. Okumura, Y. Shimbara, M. Uchida, T. Yamagata, M. Yosoi, R.G.T. Zegers
Atomic charge-exchange between semi-relativistic (v/c = 0.49) helium ions and targets from carbon to lead.
Nucl. Instrum. Methods Phys. Res. B 264, 221 (2007)

$\mathbf{He^+ + C}$	Part. Beam-Matter Interaction	420 MeV	Exp
$\mathbf{He^+ + Mg}$	Part. Beam-Matter Interaction	420 MeV	Exp
$\mathbf{He^+ + Ni}$	Part. Beam-Matter Interaction	420 MeV	Exp
$\mathbf{He^+ + Zr}$	Part. Beam-Matter Interaction	420 MeV	Exp
$\mathbf{He^+ + Sn}$	Part. Beam-Matter Interaction	420 MeV	Exp
$\mathbf{He^+ + Pb}$	Part. Beam-Matter Interaction	420 MeV	Exp

1973. A. H. Sorensen
On the nonperturbative contributions to the stopping of H- and He-like heavy ions.
Nucl. Instrum. Methods Phys. Res. B 264, 240 (2007)

A + H Z= 10-92	Part. Beam-Matter Interaction	10−1000 MeV/u	Th
A + He Z= 10-92	Part. Beam-Matter Interaction	10−1000 MeV/u	Th

1974. H. Kimura, W. Takeuchi
New local model for electronic energy loss and its application to computer simulations of channeling.
Nucl. Instrum. Methods Phys. Res. B 266, 224 (2008)

B^+ + Si	Part. Beam-Matter Interaction	20 keV	Th

1975. J. Y. Hsu, Y. C. Yu, K. M. Chen, C. H. Wang
Energy loss straggling in carbon foils by 1-2 MeV/atom lithium and carbon cluster-ions.
Nucl. Instrum. Methods Phys. Res. B 266, 1170 (2008)

Li^+ + C	Part. Beam-Matter Interaction		Exp
C^+ + C	Part. Beam-Matter Interaction		Exp

1976. B. Touchrift, H. Salah, N. Benouali
Stopping power for high energy molecular $H_2{}^+$ ions interacting with silicon targets.
Nucl. Instrum. Methods Phys. Res. B 266, 1177 (2008)

H^+ + Si	Part. Beam-Matter Interaction	900−1500 keV	Exp
$H_2{}^+$ + Si	Part. Beam-Matter Interaction	900−1500 keV	Exp

1977. M. Abdesselam, S. Ouichaoui, M. Azzouz, A. C. Chami, M. Siad
Stopping of 0.3-1.2 MeV/u protons and alpha particles in Si.
Nucl. Instrum. Methods Phys. Res. B 266, 3899 (2008)

H^+ + Si	Part. Beam-Matter Interaction	0.3−1.2 MeV/amu	Exp
He^{2+} + Si	Part. Beam-Matter Interaction	0.3−1.2 MeV/amu	Exp

1978. A. Kahoul, M. Nekkab, B. Deghfel
Empirical K-shell ionization cross-sections of elements from $_4Be$ to $_{92}U$ by proton impact.
Nucl. Instrum. Methods Phys. Res. B 266, 4969 (2008)

H^+ + A	Part. Beam-Matter Interaction	0.01−40 MeV	Exp

1979. Z.E.A. Chaoui
Electron energy loss modelling in small volumes: A Monte Carlo study.
Nucl. Instrum. Methods Phys. Res. B 266, 4976 (2008)

e + Si	Part. Beam-Matter Interaction	0−200 keV	Th

1980. A. Jablonski, C. J. Powell
Improved algorithm for calculating transport cross sections of electrons with energies from 50 eV to 30 keV.
Phys. Rev. B 76, 085123 (2007)

e + A	Part. Beam-Matter Interaction	0.05−30 keV	Th

1981. M. G. Vergniory, V. M. Silkin, I. G. Gurtubay, J. M. Pitarke
Energy loss of charged particles moving parallel to a magnesium surface: Ab initio calculations.
Phys. Rev. B 78, 155428 (2007)

$\mathbf{H^+ + Mg}$	Part. Beam-Matter Interaction		Th

1982. H. Paul
On the gas-solid difference in stopping power for low energy ions.
Nucl. Instrum. Methods Phys. Res. B 262, 13 (2007)

$\mathbf{N^+ + H}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + He}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Be}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + C}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + O}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Ne}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Al}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Si}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Ar}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Ti}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Fe}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Ni}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Cu}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Ge}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Kr}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Mo}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Cd}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Sn}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Xe}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + W}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Pt}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Au}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T
$\mathbf{N^+ + Pb}$	Part. Beam-Matter Interaction	0.025−0.05 MeV/amu	E/T

1983. M. Moneta
A model for energy loss and straggling of slow ions in electron gas with intraband exchange.
Vacuum 81, 1195 (2007)

$\mathbf{H^+ + Ni}$	Part. Beam-Matter Interaction		Th
$\mathbf{H^+ + Gd}$	Part. Beam-Matter Interaction		Th

1984. R. C. Fandanelli, J. F. Dias, M. Behar
Coulomb heating of channeled C^+ and ${C_2}^+$ molecules in Si.
Phys. Rev. A 77, 052901 (2008)

$\mathbf{C^+ + Si}$	Part. Beam-Matter Interaction	900−2200 keV/atom	E/T
$\mathbf{{C_2}^+ + Si}$	Part. Beam-Matter Interaction	900−2200 keV/atom	E/T

1985. C. C. Montanari, J. E. Miraglia, M. Behar, P. F. Duarte, N. R. Arista, J. C. Eckardt, G. H. Lantschner
Theoretical and experimental study of energy loss of Li ions in Zn.
Phys. Rev. A 77, 042901 (2008)

$\mathbf{H + Zn}$	Part. Beam-Matter Interaction	10−10,000 keV/u	E/T
$\mathbf{He + Zn}$	Part. Beam-Matter Interaction	10−10,000 keV/u	E/T
$\mathbf{He^{2+} + Zn}$	Part. Beam-Matter Interaction	10−10,000 keV/u	E/T
$\mathbf{Li + Zn}$	Part. Beam-Matter Interaction	10−10,000 keV/u	E/T
$\mathbf{Li^{3+} + Zn}$	Part. Beam-Matter Interaction	10−10,000 keV/u	E/T

1986. S. N. Markin, D. Primetzhofer, S. Prusa, M. Brunmayr, G. Kowarik, F. Aumayr, P. Bauer
Electronic interaction of very slow light ions in Au: Electronic stopping and electron emission.
Phys. Rev. B 78, 195122 (2008)

$\mathbf{H^+ + Au}$	Part. Beam-Matter Interaction	0.16−5 keV	Exp
$\mathbf{D^+ + Au}$	Part. Beam-Matter Interaction	0.16−5 keV	Exp

1987. E. A. Figueroa, E. D. Cantero, J. C. Eckardt, G. H. Lantschner, M. L. Martiarena, N. R. Arista
Energy loss versus exit angle for H^+ and He^+ ions channeled in Au (100) at very low energies, and observation of a molecular effect for incident $H_2{}^+$.
Phys. Rev. A 78, 032901 (2008)

$\mathbf{He^+ + Au}$	Part. Beam-Matter Interaction	1−10 keV/u	E/T
$\mathbf{H_2{}^+ + Au}$	Part. Beam-Matter Interaction	1−10 keV/u	E/T

1988. J. E. Valdes, P. Vargas, C. Celedon, E. Sanchez, L. Guillemot, V. A. Esaulov
Electronic density corrugation and crystal azimuthal orientation effects on energy losses of hydrogen ions in grazing scattering on a Ag(110) surface.
Phys. Rev. A 78, 032902 (2008)

$\mathbf{H^- + Ag}$	Part. Beam-Matter Interaction	1−4 keV	Exp

1989. G. Andersson, H. Morgner, H. Pohl
Energy-loss straggling of helium projectiles at low kinetic energies: Deconvolution of concentration depth profiles of inorganic salt solutes in aqueous solutions.
Phys. Rev. A 78, 032904 (2008)

He + LiI	Part. Beam-Matter Interaction	3 keV	Exp

1990. M. D. Barriga-Carrasco
Comparison between static LFC and Mermin dielectric functions on proton stopping in a degenerate electron gas.
Nucl. Instrum. Methods Phys. Res. A 606, 215 (2009)

$\mathbf{H^+ + e}$	Part. Beam-Matter Interaction	0−400 keV	Th

1991. E. O. Lieder, A. A. Pasternak, R. M. Lieder, R. A. Bark, E. A. Lawrie, J. J. Lawrie, S. M. Mullins, S. Murray, S. S. Ntshangase, P. Papka, N. Kheswa, W. J. Przybylowicz, P. T. Sechogela, K. O. Zell
Stopping power of Nd, Pm and Sm ions in Cd determined by gamma-ray lineshape analysis.
Nucl. Instrum. Methods Phys. Res. A 607, 591 (2009)

$\mathbf{Nd^+ + Cd}$	Part. Beam-Matter Interaction	600−685 keV	Exp
$\mathbf{Pm^+ + Cd}$	Part. Beam-Matter Interaction	600−685 keV	Exp
$\mathbf{Sm^+ + Cd}$	Part. Beam-Matter Interaction	600−685 keV	Exp

1992. H. Paul
The solid-gas difference in stopping powers, and statistical analysis of stopping power data.
Nucl. Instrum. Methods Phys. Res. B 267, 9 (2009)

$\mathbf{He^+ + Ar}$	Part. Beam-Matter Interaction	0.01-10^4 MeV/amu	E/T
$\mathbf{He^+ + H_2O}$	Part. Beam-Matter Interaction	0.01-10^4 MeV/amu	E/T
$\mathbf{Li^+ + He}$	Part. Beam-Matter Interaction	0.01-10^4 MeV/amu	E/T
$\mathbf{Li^+ + Ag}$	Part. Beam-Matter Interaction	0.01-10^4 MeV/amu	E/T
$\mathbf{C^+ + C}$	Part. Beam-Matter Interaction	0.01-10^4 MeV/amu	E/T
$\mathbf{C^+ + H_2O}$	Part. Beam-Matter Interaction	0.01-10^4 MeV/amu	E/T
$\mathbf{Ar^+ + Ne}$	Part. Beam-Matter Interaction	0.01-10^4 MeV/amu	E/T

1993. K. Kumagai, S. Tanuma, C. J. Powell
Energy dependence of electron stopping powers in elemental solids over the 100 eV to 30 keV energy range.
Nucl. Instrum. Methods Phys. Res. B 267, 167 (2009)

e + Si	Part. Beam-Matter Interaction	0.1−30 keV	Exp
e + Au	Part. Beam-Matter Interaction	0.1−30 keV	Exp

1994. H. Gumus, O. Kabadayi
Z_2 structure of the stopping power for electron beams.
Nucl. Instrum. Methods Phys. Res. B 267, 299 (2009)

e + A	Part. Beam-Matter Interaction	10^2-10^4 eV	E/T

1995. J. M. Pruneda, D. Sanchez-Portal, A. Arnau, J. I. Juaristi, E. Artacho
Heating electrons with ion irradiation: A first-principles approach.
Nucl. Instrum. Methods Phys. Res. B 267, 590 (2009)

H^+ + LiF	Part. Beam-Matter Interaction		Th

1996. C. Heuser, M. Marpe, D. Diesing, A. Wucher
Kinetic excitation of solids induced by energetic particle bombardment: Influence of impact angle.
Nucl. Instrum. Methods Phys. Res. B 267, 601 (2009)

Ar^+ + Ag	Part. Beam-Matter Interaction	3−10 keV	Th

1997. P. L. Grande, G. Schiwietz
Convolution approximation for the energy loss, ionization probability and straggling of fast ions.
Nucl. Instrum. Methods Phys. Res. B 267, 859 (2009)

H^+ + H	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th
H^+ + He	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th
H^+ + C	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th
Ne^{2+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th
Ne^{3+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th
Ne^{4+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th
Ne^{5+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th
Ne^{6+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th
Ne^{7+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th
Ne^{8+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th
Ne^{9+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th
Ne^{10+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th
U^{50+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th
U^{90+} + Xe	Part. Beam-Matter Interaction	0.02−60 MeV/amu	Th

1998. V. R. Altapova, O. V. Bogdanov, Yu. L. Pivovarov
Cherenkov radiation from relativistic heavy ions taking account of their slowing down in radiator.
Nucl. Instrum. Methods Phys. Res. B 267, 896 (2009)

Ne^+ + LiF	Part. Beam-Matter Interaction	1000 MeV/amu	Th
Fe^+ + LiF	Part. Beam-Matter Interaction	1000 MeV/amu	Th
Au^+ + LiF	Part. Beam-Matter Interaction	1000 MeV/amu	Th

1999. C. Bousis, D. Emfietzoglou, H. Nikjoo, P. Hadjidoukas, A. Pathak
The effects of energy-loss straggling and elastic scattering models on Monte Carlo calculations of dose distribution functions for 10 keV to 1 MeV incident electrons in water.
Nucl. Instrum. Methods Phys. Res. B 267, 1725 (2009)

e + H_2O	Part. Beam-Matter Interaction	10^{-2}-1 MeV	E/T

2000. H. Paul, P. L. Grande, D. Y. Smith
Optical oscillator strengths, mean excitation energy, shell corrections and experimental values for stopping power.
Nucl. Instrum. Methods Phys. Res. B 267, 2471 (2009)

H^+ + Al	Part. Beam-Matter Interaction	1−100 MeV	Th
H^+ + Si	Part. Beam-Matter Interaction	1−100 MeV	Th
H^+ + Cu	Part. Beam-Matter Interaction	1−100 MeV	Th
H^+ + Au	Part. Beam-Matter Interaction	1−100 MeV	Th
H^+ + H_2	Part. Beam-Matter Interaction	1−100 MeV	Th

2001. A. A. Babaev, Yu. L. Pivovarov
Theory of resonant coherent excitation of relativistic hydrogen-like heavy ions under planar channelling in a Si crystal.
J. Phys. B 41, 195001 (2008)

Ar^{17+} + Si	Part. Beam-Matter Interaction	390 MeV/u	Th

2002. Y.-H. Song, D. Zhao, Y.-N. Wang
Kinetic study on self-energy and stopping power of charged particles moving in metallic carbon nanotubes.
Phys. Rev. A 78, 012901 (2008)

H^+ + C	Part. Beam-Matter Interaction	0−4 v(a.u.)	Th

3.7 Interactions of Atomic Particles with Fields

2003. Q. Wu, G.W.F. Drake
Hyperfine structure of the 2^3P state of ^3He with and without an external magnetic field.
J. Phys. B 40, 393 (2007)

He	Atom Field Interaction		Th

2004. A. Chakraborty
High-magnetic-field-assisted scattering of electrons with atomic hydrogen.
J. Phys. B 40, 1627 (2007)

e + H	Atom Field Interaction	0−10 a.u.	Th

2005. J. S. Parker, K. J. Meharg, G. A. McKenna, K. T. Taylor
Single-ionization of helium at Ti:Sapphire wavelengths: Rates and scaling laws.
J. Phys. B 40, 1729 (2007)

He	Atom Field Interaction	390−780 nm	Th

2006. T. Topcu, F. Robicheaux
Chaotic ionization of a highly excited hydrogen atom in parallel electric and magnetic fields.
J. Phys. B 40, 1925 (2007)

hν + H	Atom Field Interaction		Th
hν + H*	Atom Field Interaction		Th

2007. J. Hildebrandt
High-frequency Stark effect and two-quantum transitions.
J. Phys. B 40, 2121 (2007)

Li	Atom Field Interaction	10 GHz	E/T

2008. M. Ummal Momeen, G. Rangarajan, P. C. Deshmukh
Variations of intensity in Rb D_2 line at weak/intermediate fields.
J. Phys. B 40, 3163 (2007)

Rb	Atom Field Interaction	0−6 mT	E/T

2009. A. V. Turbiner, N. L. Guevara
The HeH^+ molecular ion in a magnetic field.
J. Phys. B 40, 3249 (2007)

HeH^+	Atom Field Interaction		Th

2010. M. Cirisan, R. J. Pelaez, S. Djurovic, J. A. Aparicio, S. Mar
Stark shift measurements of Xe II and Xe III spectral lines.
J. Phys. B 40, 3477 (2007)

Xe^+	Atom Field Interaction	(5−30)×10^3 K	E/T
Xe^{2+}	Atom Field Interaction	(5−30)×10^3 K	E/T

2011. T. Kaneyasu, Y. Hikosaka, E. Shigemasa, F. Penent, P. Lablanquie, T. Aoto, K. Ito
Autoionization of the Ne^+ Rydberg states formed via valence photoemission.
J. Phys. B 40, 4047 (2007)

Ne	Atom Field Interaction		Exp
Ne^+	Atom Field Interaction		Exp

2012. J. D. Hey
Some properties of Stark states of hydrogenic atoms and ions.
J. Phys. B 40, 4077 (2007)

H Z= 1-92	Atom Field Interaction		Th

2013. M. F. Ciappina
Fully differential cross sections for ion-atom impact ionization in the presence of a laser field.
J. Phys. B 40, 4155 (2007)

C^{6+} + He	Atom Field Interaction	100 MeV/u	Th

2014. L. B. Zhao, P. C. Stancil
Calculation of low-lying levels of atomic hydrogen in a magnetic field with a finite basis set from B-splines.
J. Phys. B 40, 4347 (2007)

H	Atom Field Interaction		Th

2015. D. Dimitrovski, J. R. Goetz, J. S. Briggs
Ionization and recombination of many-electron atoms and ions in strong, short laser pulses.
J. Phys. B 40, 4355 (2007)

$\mathbf{H^-}$	Atom Field Interaction		Th
He	Atom Field Interaction		Th

2016. A. M. Sayler, P. Q. Wang, K. D. Carnes, I. Ben-Itzhak
Determining intensity dependence of ultrashort laser processes through focus z-scanning intensity-difference spectra: Application to laser-induced dissociation of $H_2{}^+$.
J. Phys. B 40, 4367 (2007)

$\mathbf{H_2{}^+}$	Atom Field Interaction	1.3×10^{15} W/cm^2	Exp

2017. J. Colgan, M. Foster, M. S. Pindzola, F. Robicheaux
The evolution of the triple differential cross sections for the double photoionization of He and H_2.
J. Phys. B 40, 4391 (2007)

He	Atom Field Interaction	76−99 eV	Th
$\mathbf{H_2}$	Atom Field Interaction	76−99 eV	Th

2018. A. Cerkic, D. B. Milosevic
Focal averaging and incoherent scattering in laser-assisted radiative recombination and scattering processes.
Phys. Rev. A 75, 013412 (2007)

e + He	Atom Field Interaction	2−25 eV	Th
e + $\mathbf{He^+}$	Atom Field Interaction	2−25 eV	Th

2019. T. Kirchner
Laser-field enhanced electron transfer in p-Ne and p-Ar collisions.
Phys. Rev. A 75, 025401 (2007)

$\mathbf{H^+}$ **+ Ne + h**ν	Atom Field Interaction	2−20 keV	Th
$\mathbf{H^+}$ **+ Ar + h**ν	Atom Field Interaction	2−20 keV	Th

2020. N. Vanhaecke, U. Meier, M. Andrist, B. H. Meier, F. Merkt
Multistage Zeeman deceleration of hydrogen atoms.
Phys. Rev. A 75, 031402 (2007)

H	Atom Field Interaction	225−313 m/s	Exp

2021. J. Benhelm, G. Kirchmair, U. Rapol, T. Koerber, C. F. Roos, R. Blatt
Measurement of the hyperfine structure of the $S_{1/2} - D_{5/2}$ transition in $^{43}Ca^+$.
Phys. Rev. A 75, 032506 (2007)

$\mathbf{Ca^+}$	Atom Field Interaction	0−6 G	Exp

2022. Z. Li, R. V. Krems
Electric-field-induced Feshbach resonances in ultracold alkali-metal mixtures.
Phys. Rev. A 75, 032709 (2007)

Li + Cs	Atom Field Interaction	10^{-7} cm^{-1}	Th

2023. S. Moal, M. Portier, N. Zahzam, M. Leduc
Lifetime of weakly bound dimers of ultracold metastable helium studied by photoassociation.
Phys. Rev. A 75, 033415 (2007)

He + He	Atom Field Interaction	5−20 mW/cm^2	Exp

2024. T. V. Tscherbul, J. Klos, L. Rajchel, R. V. Krems
Fine and hyperfine interactions in cold YbF-He collisions in electromagnetic fields.
Phys. Rev. A 75, 033416 (2007)

He + YbF	Atom Field Interaction	10^{-3}-1 K	Th
YbF	Atom Field Interaction	10^{-3}-1 K	Th

2025. X. Wang, H. Qiao
Full-core-plus-correlation method in cyclindrical coordinates: Lithium atom in strong magnetic fields.
Phys. Rev. A 75, 033421 (2007)

Li	Atom Field Interaction		Th

2026. G. Lagmago Kamta, A. D. Bandrauk
Effects of molecular symmetry on enhanced ionization by intense laser pulses.
Phys. Rev. A 75, 041401 (2007)

$\mathbf{H_2}^+$	Atom Field Interaction	5×10^{13} W/cm^2	Th

2027. J. Wu, H. Zeng, C. Guo
Polarization effects on nonsequential double ionization of molecular fragments in strong laser fields.
Phys. Rev. A 75, 043402 (2007)

$\mathbf{N_2}$	Atom Field Interaction	$0.7{-}4{\times}10^{14}$ W/cm^2	Exp
$\mathbf{O_2}$	Atom Field Interaction	$0.7{-}4{\times}10^{14}$ W/cm^2	Exp

2028. J. Zhang, T. Nakajima
Coulomb effects in photoionization of H atoms irradiated by intense laser fields.
Phys. Rev. A 75, 043403 (2007)

H	Atom Field Interaction	10^{13}-10^{16} W/cm^2	Th

2029. C. Wu, Z. Wu, Q. Liang, M. Liu, Y. Deng, Q. Gong
Ionization and dissociation of alkanes in few-cycle laser fields.
Phys. Rev. A 75, 043408 (2007)

$\mathbf{CH_4}$	Atom Field Interaction	1.4×10^{14} W/cm^2	Exp
$\mathbf{C_2H_6}$	Atom Field Interaction	1.4×10^{14} W/cm^2	Exp
$\mathbf{C_3H_8}$	Atom Field Interaction	1.4×10^{14} W/cm^2	Exp

2030. A. V. Turbiner, N. L. Guevara, J. C. Lopez Vieyra
$H_3{}^+$ **molecular ion in a magnetic field: Linear parallel configuration.**
Phys. Rev. A 75, 053408 (2007)

$\mathbf{H_3}^+$	Atom Field Interaction	$0{-}4.4{\times}10^{13}$ G	Th

2031. R. Gonzalez-Ferez, M. Weidemuller, P. Schmelcher
Photoassociation of cold heteronuclear dimers in static electric fields.
Phys. Rev. A 76, 023402 (2007)

Li	Atom Field Interaction	0-10^{-5} a.u.	Th
Li + Cs	Atom Field Interaction	0-10^{-5} a.u.	Th
Cs	Atom Field Interaction	0-10^{-5} a.u.	Th

2032. E. S. Shuman, W. Yang, T. F. Gallagher
Magnetic field enhancement of dielectronic recombination from a continuum of finite bandwidth.
Phys. Rev. A 76, 031401 (2007)

e + Ba^+	Atom Field Interaction	0−250 G	Exp

2033. S. Buecheler, D. Engel, Joerg Main, G. Wunner
Quantum Monte Carlo studies of the ground states of heavy atoms in neutron-star magnetic fields.
Phys. Rev. A 76, 032501 (2007)

He	Atom Field Interaction	10^7-5×10^8 T	Th
Li	Atom Field Interaction	10^7-5×10^8 T	Th
Be	Atom Field Interaction	10^7-5×10^8 T	Th
B	Atom Field Interaction	10^7-5×10^8 T	Th
C	Atom Field Interaction	10^7-5×10^8 T	Th
N	Atom Field Interaction	10^7-5×10^8 T	Th
O	Atom Field Interaction	10^7-5×10^8 T	Th
F	Atom Field Interaction	10^7-5×10^8 T	Th
Ne	Atom Field Interaction	10^7-5×10^8 T	Th
Na	Atom Field Interaction	10^7-5×10^8 T	Th
Mg	Atom Field Interaction	10^7-5×10^8 T	Th
Al	Atom Field Interaction	10^7-5×10^8 T	Th
Si	Atom Field Interaction	10^7-5×10^8 T	Th
P	Atom Field Interaction	10^7-5×10^8 T	Th
S	Atom Field Interaction	10^7-5×10^8 T	Th
Cl	Atom Field Interaction	10^7-5×10^8 T	Th
Ar	Atom Field Interaction	10^7-5×10^8 T	Th
K	Atom Field Interaction	10^7-5×10^8 T	Th
Ca	Atom Field Interaction	10^7-5×10^8 T	Th
Sc	Atom Field Interaction	10^7-5×10^8 T	Th
Ti	Atom Field Interaction	10^7-5×10^8 T	Th
V	Atom Field Interaction	10^7-5×10^8 T	Th
Cr	Atom Field Interaction	10^7-5×10^8 T	Th
Mn	Atom Field Interaction	10^7-5×10^8 T	Th
Fe	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^+	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{2+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{3+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{4+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{5+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{6+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{7+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{8+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{9+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{10+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{11+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{12+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{13+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{14+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{15+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{16+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{17+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{18+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{19+}	Atom Field Interaction	10^7-5×10^8 T	Th
Fe^{20+}	Atom Field Interaction	10^7-5×10^8 T	Th

$\mathbf{Fe^{21+}}$	Atom Field Interaction	10^7-5×10^8 T	Th
$\mathbf{Fe^{22+}}$	Atom Field Interaction	10^7-5×10^8 T	Th
$\mathbf{Fe^{23+}}$	Atom Field Interaction	10^7-5×10^8 T	Th
$\mathbf{Fe^{24+}}$	Atom Field Interaction	10^7-5×10^8 T	Th

2034. L.A.A. Nikolopoulos, T. K. Kjeldsen, L. B. Madsen
Three-dimensional time-dependent Hartree-Fock approach for arbitrarily oriented molecular hydrogen in strong electromagnetic fields.
Phys. Rev. A 76, 033402 (2007)

$\mathbf{H_2}$	Atom Field Interaction	10−20 eV	Th
$\mathbf{H_2}^+$	Atom Field Interaction	10−20 eV	Th

2035. A. E., III DePrince, D. A. Mazziotti
Parametric approach to variational two-electron reduced-density-matrix theory.
Phys. Rev. A 76, 042501 (2007)

$\mathbf{H_2}^+$	Atom Field Interaction		Th

2036. Z. Chen, T. Morishita, A.-T. Le, C. D. Lin
Analysis of two-dimensional high-energy photoelectron momentum distributions in the single ionization of atoms by intense laser pulses.
Phys. Rev. A 76, 043402 (2007)

H	Atom Field Interaction	5×10^{13}-5×10^{14} W/cm^2	Th

2037. H. W. van der Hart, M. A. Lysaght, P. G. Burke
Time-dependent multielectron dynamics of Ar in intense short laser pulses.
Phys. Rev. A 76, 043405 (2007)

Ar	Atom Field Interaction	0.25−2$\times 10^{14}$ W/cm^2	Th

2038. D. A. Telnov, S.-I. Chu
Ab initio study of the orientation effects in multiphoton ionization and high-order harmonic generation from the ground and excited electronic states of $H_2{}^+$.
Phys. Rev. A 76, 043412 (2007)

$\mathbf{H_2}^+$	Atom Field Interaction	1−3$\times 10^{14}$ W/cm^2	Th

2039. R. Patel, N.J.A. Jones, H. H. Fielding
Rotational-state-selective field ionization of molecular Rydberg states.
Phys. Rev. A 76, 043413 (2007)

NO	Atom Field Interaction	325−330 nm	Exp
NO*	Atom Field Interaction	325−330 nm	Exp

2040. A. Palacios, C. W. McCurdy, T. N. Rescigno
Extracting amplitudes for single and double ionization from a time-dependent wave packet.
Phys. Rev. A 76, 043420 (2007)

H	Atom Field Interaction	13.6−40 eV	Th

2041. M. F. Ciappina, L. B. Madsen
Laser-assisted ion-atom collisions: Plateau, cutoff, and multiphoton peaks.
Phys. Rev. A 77, 023412 (2007)

$\mathbf{H^+ + He}$	Atom Field Interaction	2.5 MeV	Th

2042. J.-P. Karr, V. I. Korobov, L. Hilico
Vibrational spectroscopy of $H_2{}^+$: Precise evaluation of the Zeeman effect.
Phys. Rev. A 77, 062507 (2008)

$\mathbf{H_2{}^+}$	Atom Field Interaction		Th

2043. U. Thumm, T. Niederhausen, B. Feuerstein
Time-series analysis of vibrational nuclear wave-packet dynamics in $D_2{}^+$.
Phys. Rev. A 77, 063401 (2008)

$\mathbf{H_2{}^+}$	Atom Field Interaction		E/T
$\mathbf{D_2{}^+}$	Atom Field Interaction		E/T

2044. Z. Zhou, J. Yuan
Fine structures of the harmonic and hyper-Raman spectrum of the hydrogen atom in an intense high-frequency laser pulse.
Phys. Rev. A 77, 063411 (2008)

H	Atom Field Interaction	1 a.u.	Th

2045. E. S. Shuman, W. Yang, T. F. Gallagher
Enhancement of dielectronic recombination in combined electric and magnetic fields.
Phys. Rev. A 77, 063419 (2008)

$\mathbf{e + Ba^+}$	Atom Field Interaction	0 eV	Exp
$\mathbf{e + Ba^{+*}}$	Atom Field Interaction	0 eV	Exp

2046. D. L. Moskovkin, V. M. Shabaev, W. Quint
Zeeman effect of the hyperfine-structure levels in lithiumlike ions.
Phys. Rev. A 77, 063421 (2007)

$\mathbf{C^{3+}}$	Atom Field Interaction		Th
$\mathbf{O^{5+}}$	Atom Field Interaction		Th
$\mathbf{Ne^{7+}}$	Atom Field Interaction		Th
$\mathbf{Mg^{9+}}$	Atom Field Interaction		Th
$\mathbf{S^{13+}}$	Atom Field Interaction		Th
$\mathbf{Ca^{17+}}$	Atom Field Interaction		Th
$\mathbf{Cr^{21+}}$	Atom Field Interaction		Th
$\mathbf{Ni^{25+}}$	Atom Field Interaction		Th
$\mathbf{Zn^{27+}}$	Atom Field Interaction		Th
$\mathbf{Ge^{29+}}$	Atom Field Interaction		Th

2047. J. McKenna, A. M. Sayler, B. Gaire, N. G. Johnson, E. Parke, K. D. Carnes, B. D. Esry, I. Ben-Itzhak
Intensity dependence in the dissociation branching ratio of ND^+ using intense femtosecond laser pulses.
Phys. Rev. A 77, 063422 (2007)

$\mathbf{h\nu + NH^+}$	Atom Field Interaction	1.55 eV	Exp
$\mathbf{h\nu + ND^+}$	Atom Field Interaction	1.55 eV	Exp

2048. D. Baye, M. Vincke, M. Hesse
Simple and accurate calculations on a Lagrange mesh of the hydrogen atom in a magnetic field.
J. Phys. B 41, 055005 (2008)

H	Atom Field Interaction	10^5-10^8 T	Th

2049. M.-F. Gu, C. T. Holcomb, R. J. Jayakuma, S. L. Allen
Atomic models for the motional Stark effect diagnostic.
J. Phys. B 41, 095701 (2008)

H + H	Atom Field Interaction	2−200 keV	E/T
H^* + H_2	Atom Field Interaction	2−200 keV	E/T

2050. E. Stambulchik, Y. Maron
Stark effect of high-n hydrogen-like transitions: Quasi-contiguous approximation.
J. Phys. B 41, 095703 (2008)

H	Atom Field Interaction	10 kV/cm	Th

2051. D. Fregenal, M. Forre, E. Horsdal, C. Fisker, N. A. Kjaer
Transient intrashell resonances in Rydberg atoms.
J. Phys. B 41, 105003 (2008)

Li	Atom Field Interaction		E/T
Li^*	Atom Field Interaction		E/T

2052. M. Gruetter, O. Zehnder, T. P. Softley, F. Merkt
Spectroscopic study and multichannel quantum defect theory analysis of the Stark effect in Rydberg states of neon.
J. Phys. B 41, 115001 (2008)

Ne	Atom Field Interaction	0−250 V/cm	E/T

2053. N. F. Allard, J. F. Kielkopf, R. Cayrel, C. van 't Veer-Menneret
Self-broadening of the hydrogen Balmer α line.
Astron. Astrophys. 480, 581 (2008)

H	Atom Field Interaction	3000−12,000 K	Th

2054. A. Alonso-Medina, C. Colon
Measured Stark widths of several Sn I and Sn II spectral lines in a laser-induced plasma.
Astrophys. J. 672, 1286 (2008)

Sn	Atom Field Interaction	11,000 K	Exp
Sn^+	Atom Field Interaction	11,000 K	Exp

2055. M. Kajita
Prospects of detecting m_3/m_p variance using vibrational transition frequencies of $^2\Sigma - state$ molecules.
Phys. Rev. A 77, 012511 (2008)

NH + NH	Atom Field Interaction	10^{-6}-0.5 K	Th
CaH + CaH	Atom Field Interaction	10^{-6}-0.5 K	Th
MgH + MgH	Atom Field Interaction	10^{-6}-0.5 K	Th

2056. G. Guillon, T. Stoecklin, A. Voronin
Spin depolarization of $N_2{}^+$ ($^2\Sigma^+$) in collisions with ^3He and ^4He in a magnetic field.
Phys. Rev. A 77, 042718 (2008)

$N_2{}^+$ + He	Atom Field Interaction	10^{-8}-10^0 cm^{-1}	Th

2057. X. Wang, H. Qiao
Configuration-interaction method with Hylleraas-Gaussian-type basis functions in cylindrical coordinates: Helium atom in a strong magnetic field.
Phys. Rev. A 77, 043414 (2008)

He	Atom Field Interaction	0-10^7 T	Th

2058. L. Windholz, E. Winklhofer, R. Drozdowski, J. Kwela, T. J. Wasowicz, J. Heldt
Stark effect of atomic helium second triplet series in electric fields up to 1600 kV cm^{-1}.
Phys. Scr. 78, 065303 (2008)

He	Atom Field Interaction		Th

2059. R. J. Pelaez, S. Djurovic, M. Cirisan, F. Rodriguez, J. A. Aparicio, S. Mar
Ne II Stark width and shift regularities.
Astrophys. J., Part 1 687, 1423 (2008)

Ne^+	Atom Field Interaction	25,000−45,000 K	Exp

2060. H.-Y. Meng, Y.-X. Zhang, S. Kang, T.-Y. Shi, M.-S. Zhan
Theoretical complex Stark energies of lithium by a complex scaling plus the B-spline approach.
J. Phys. B 41, 155003 (2008)

Li	Atom Field Interaction	0−0.0025 a.u.	Th

2061. D. Baye, M. Hesse, M. Vincke
Electromagnetic transitions of the hydrogen atom in a magnetic field by the Lagrange-mesh method.
J. Phys. B 41, 185002 (2008)

H	Atom Field Interaction	1−1000 a.u.	Th

2062. N.J.A. Jones, R. S. Minns, R. Patel, H. H. Fielding
Observation of the Stark effect in $\nu^+ = 0$ Rydberg states of NO: A comparison between predissociating and bound states.
J. Phys. B 41, 185102 (2008)

NO	Atom Field Interaction	0−150 V/cm	Exp

2063. J. A. Petrus, P. Bohlouli-Zanjani, J.D.D. Martin
ac electric-field-induced resonant energy transfer between cold Rydberg atoms.
J. Phys. B 41, 245001 (2008)

Rb	Atom Field Interaction	1.356 GHz	Exp
Rb^*	Atom Field Interaction	1.356 GHz	Exp

2064. L. Hamonou, A. Hibbert
Static and dynamic polarizabilities of Mg-like ions.
J. Phys. B 41, 245004 (2008)

Al^+	Atom Field Interaction	0−0.6 a.u.	Th
Si^{2+}	Atom Field Interaction	0−0.6 a.u.	Th
P^{3+}	Atom Field Interaction	0−0.6 a.u.	Th
S^{4+}	Atom Field Interaction	0−0.6 a.u.	Th

2065. D. Engel, G. Wunner
Hartree-Fock-Roothaan calculations for many-electron atoms and ions in neutron-star magnetic fields.
Phys. Rev. A 78, 032515 (2008)

He	Atom Field Interaction	10^7 T	Th
Li	Atom Field Interaction	10^7 T	Th
Be	Atom Field Interaction	10^7 T	Th
B	Atom Field Interaction	10^7 T	Th
C	Atom Field Interaction	10^7 T	Th
N	Atom Field Interaction	10^7 T	Th
O	Atom Field Interaction	10^7 T	Th
F	Atom Field Interaction	10^7 T	Th
Ne	Atom Field Interaction	10^7 T	Th
Na	Atom Field Interaction	10^7 T	Th
Mg	Atom Field Interaction	10^7 T	Th
Al	Atom Field Interaction	10^7 T	Th
Si	Atom Field Interaction	10^7 T	Th
P	Atom Field Interaction	10^7 T	Th
S	Atom Field Interaction	10^7 T	Th
Cl	Atom Field Interaction	10^7 T	Th
Ar	Atom Field Interaction	10^7 T	Th
K	Atom Field Interaction	10^7 T	Th
Ca	Atom Field Interaction	10^7 T	Th
Sc	Atom Field Interaction	10^7 T	Th
Ti	Atom Field Interaction	10^7 T	Th
V	Atom Field Interaction	10^7 T	Th
Cr	Atom Field Interaction	10^7 T	Th
Mn	Atom Field Interaction	10^7 T	Th
Fe	Atom Field Interaction	10^7 T	Th
Fe^{+}	Atom Field Interaction	10^7 T	Th
Fe^{2+}	Atom Field Interaction	10^7 T	Th
Fe^{3+}	Atom Field Interaction	10^7 T	Th
Fe^{4+}	Atom Field Interaction	10^7 T	Th
Fe^{5+}	Atom Field Interaction	10^7 T	Th
Fe^{6+}	Atom Field Interaction	10^7 T	Th
Fe^{7+}	Atom Field Interaction	10^7 T	Th
Fe^{8+}	Atom Field Interaction	10^7 T	Th
Fe^{9+}	Atom Field Interaction	10^7 T	Th
Fe^{10+}	Atom Field Interaction	10^7 T	Th
Fe^{11+}	Atom Field Interaction	10^7 T	Th
Fe^{12+}	Atom Field Interaction	10^7 T	Th
Fe^{13+}	Atom Field Interaction	10^7 T	Th
Fe^{14+}	Atom Field Interaction	10^7 T	Th
Fe^{15+}	Atom Field Interaction	10^7 T	Th
Fe^{16+}	Atom Field Interaction	10^7 T	Th
Fe^{17+}	Atom Field Interaction	10^7 T	Th
Fe^{18+}	Atom Field Interaction	10^7 T	Th
Fe^{19+}	Atom Field Interaction	10^7 T	Th
Fe^{20+}	Atom Field Interaction	10^7 T	Th
Fe^{21+}	Atom Field Interaction	10^7 T	Th

2066. J. Aldegunde, B. A. Rivington, P. S. Zuchowski, J. M. Hutson
Hyperfine energy levels of alkali-metal dimers: Ground-state polar molecules in electric and magnetic fields.
Phys. Rev. A 78, 033434 (2008)

Cs_2	Atom Field Interaction	0−50 G	Th

K_2	Atom Field Interaction	0−50 G	Th
Na_2	Atom Field Interaction	0−50 G	Th
NaK	Atom Field Interaction	0−50 G	Th
CsCl	Atom Field Interaction	0−50 G	Th
RbF	Atom Field Interaction	0−50 G	Th
RbCl	Atom Field Interaction	0−50 G	Th
RbBr	Atom Field Interaction	0−50 G	Th
RbI	Atom Field Interaction	0−50 G	Th
Rb_2	Atom Field Interaction	0−50 G	Th
KF	Atom Field Interaction	0−50 G	Th
Kli	Atom Field Interaction	0−50 G	Th
RbLi	Atom Field Interaction	0−50 G	Th
CsF	Atom Field Interaction	0−50 G	Th

2067. S. E. Maxwell, M. T. Hummon, Y. Wang, A. A. Buchachenko, R. V. Krems, J. M. Doyle
Spin-orbit interaction and large inelastic rates in bismuth-helium collisions.
Phys. Rev. A 78, 0427206 (2008)

Bi + He	Atom Field Interaction	0.5 K	E/T

2068. B. C. Anger, G. Schrank, A. Schoeck, K. A. Butler, M. S. Solum, R. J. Pugmire, B. Saam
Gas-phase spin relaxation of ^{129}Xe.
Phys. Rev. A 78, 043406 (2008)

Xe + Xe	Atom Field Interaction	293−373 K	Exp

2069. K. Alioua, M. Bouledroua, A. R. Allouche, M. Aubert-Frecon
Far-wing profile of photoabsorption spectra of Na(3s-ep) atoms perturbed by helium.
J. Phys. B 41, 175102 (2008)

Na + He	Atom Field Interaction	528 nm	E/T
Na^* + He	Atom Field Interaction	528 nm	E/T

2070. X.-B. Bian, L.-Y. Peng, T.-Y. Shi
Ionization dynamics of linear molecular ion $H_3{}^{2+}$ in dc and low-frequency laser fields.
Phys. Rev. A 78, 053408 (2008)

$H_3{}^{2+}$	Atom Field Interaction	0.0533 a.u. − 1064 nm	Th

2071. D. G. Arbo, E. Persson, K. I. Dimitriou, J. Burgdorfer
Carrier-envelope phase dependence in atomic ionization by short-laser pulses.
Nucl. Instrum. Methods Phys. Res. B 267, 330 (2009)

H	Atom Field Interaction		Exp
Ar	Atom Field Interaction		Exp

2072. V. D. Rodriguez, P. A. Macri, D. G. Arbo
Resonant-enhanced above-threshold ionization of atoms by XUV short laser pulses.
Nucl. Instrum. Methods Phys. Res. B 267, 334 (2009)

H	Atom Field Interaction		Th

2073. V. S. Petrovic, J. J. Kay, S. L. Coy, R. W. Field
The Stark effect in Rydberg states of a highly polar diatomic molecule: CaF.
J. Chem. Phys. 131, 064301 (2009)

CaF	Atom Field Interaction		Th

2074. S. L. Zeng, L. Liu, J. G. Wang, R. K. Janev
Atomic collisions with screened Coulomb interactions: Excitation and electron capture in H^+ + H collisions.
J. Phys. B 41, 135202 (2008)

H^+ + H	Atom Field Interaction	1−400 keV	Th

2075. M. Gacesa, P. Pellegrini, R. Cote
Feshbach resonances in ultracold $^{6,7}Li$ + ^{23}Na atomic mixtures.
Phys. Rev. A 78, 010701 (2008)

Li + Na	Atom Field Interaction	0−1200 G	Th

2076. U. Vogl, M. Weitz
Spectroscopy of atomic rubidium at 500-bar buffer gas pressure: Approaching the thermal equilibrium of dressed atom-light states.
Phys. Rev. A 78, 011401 (2008)

Rb	Atom Field Interaction	400−500 atm	Exp

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List of Elements

1 **H** hydrogen
2 **He** helium
3 **Li** lithium
4 **Be** beryllium
5 **B** boron
6 **C** carbon
7 **N** nitrogen
8 **O** oxygen
9 **F** fluorine
10 **Ne** neon
11 **Na** sodium
12 **Mg** magnesium
13 **Al** aluminium
14 **Si** silicon
15 **P** phosphorus
16 **S** sulphur
17 **Cl** chlorine
18 **Ar** argon
19 **K** potassium
20 **Ca** calcium
21 **Sc** scandium
22 **Ti** titanium
23 **V** vanadium
24 **Cr** chromium
25 **Mn** manganese
26 **Fe** iron
27 **Co** cobalt
28 **Ni** nickel
29 **Cu** copper
30 **Zn** zinc
31 **Ga** gallium
32 **Ge** germanium
33 **As** arsenic
34 **Se** selenium
35 **Br** bromine
36 **Kr** krypton
37 **Rb** rubidium
38 **Sr** strontium
39 **Y** yttrium
40 **Zr** zirconium
41 **Nb** niobium
42 **Mo** molybdenum
43 **Tc** technetium
44 **Ru** ruthenium
45 **Rh** rhodium
46 **Pd** palladium
47 **Ag** silver
48 **Cd** cadmium
49 **In** indium
50 **Sn** tin
51 **Sb** antimony
52 **Te** tellurium
53 **I** iodine
54 **Xe** xenon
55 **Cs** cesium
56 **Ba** barium
57 **La** lanthanum
58 **Ce** cerium
59 **Pr** praseodymium
60 **Nd** neodymium
61 **Pm** promethium
62 **Sm** samarium
63 **Eu** europium
64 **Gd** gadolinium
65 **Tb** terbium
66 **Dy** dysprosium
67 **Ho** holmium
68 **Er** erbium
69 **Tm** thulium
70 **Yb** ytterbium
71 **Lu** lutetium
72 **Hf** hafnium
73 **Ta** tantalum
74 **W** tungsten
75 **Re** rhenium
76 **Os** osmium
77 **Ir** iridium
78 **Pt** platinum
79 **Au** gold
80 **Hg** mercury
81 **Tl** thallium
82 **Pb** lead
83 **Bi** bismuth
84 **Po** polonium
85 **At** astatine
86 **Rn** radon
87 **Fr** francium
88 **Ra** radium
89 **Ac** actinium
90 **Th** thorium
91 **Pa** protactinium
92 **U** uranium
93 **Np** neptunium
94 **Pu** plutonium
95 **Am** americium
96 **Cm** curium
97 **Bk** berkelium
98 **Cf** californium
99 **Es** einsteinium
100 **Fm** fermium
101 **Md** mendelevium
102 **No** nobelium
103 **Lr** lawrencium
104 **Rf** rutherfordium
105 **Db** dubnium
106 **Sg** seaborgium
107 **Bh** bohrium
108 **Hs** hassium
109 **Mt** meitnerium

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