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Nuclear Data Newsletter

A newsletter of the Nuclear Data Section (NDS)
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In this Issue

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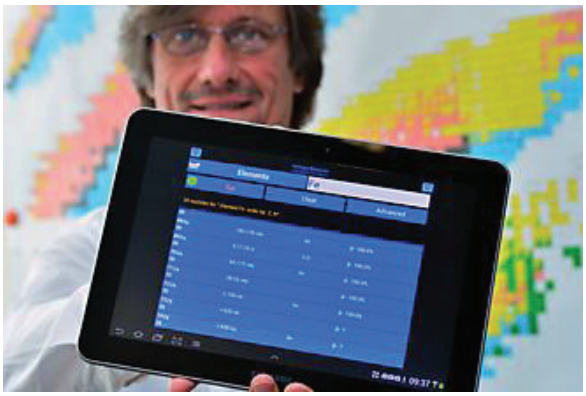


Marco Verpelli with the new Isotope Browser App for Android mobile devices.

From the Section Head

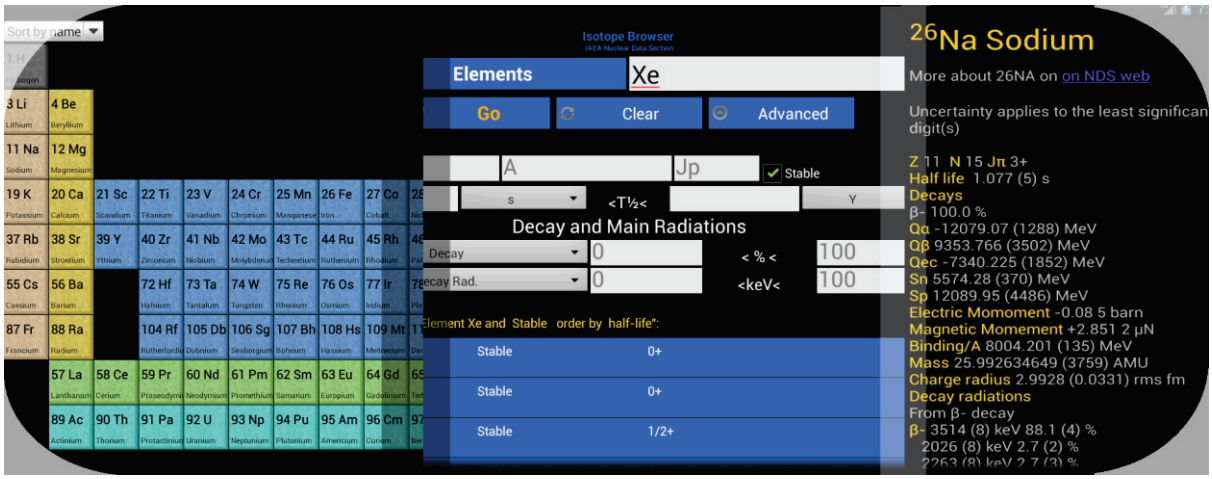
Since the previous newsletter there has been a major effort to restore the functioning of the NDS web pages and to ensure that users have access to the full range of services. This has essentially been achieved and in the process several applications such as IBANDL and LiveChart have been rewritten to improve security and functionality. Although the move of servers from the IAEA data centre to the 'cloud' is transparent to users, the actual availability has recently become superior to what could have been provided on the IAEA network. Automated procedures ensure that the site is updated regularly. While a few niggles remain, we are proud of the service we can now provide. Parts of the webpage are mirrored on sites in India, and recently China, giving flexibility to the many users in these two regions.

Another achievement has been the release of an Android app, Isotope Browser, suitable for tablets and smartphones which provides summary information on over 4,000 nuclides. While information from this app is not in the detail available in LiveChart, it is suitable as a summary reference when no internet access is possible or where it is slow. Please visit http://play.google.com/store/apps and search for "isotope browser" to be able to see all the features available and if you have an Android device, to download the app.

There have been several recent staff changes, Rosalinda Rangel Alvarez became the Section Secretary and Andras Vasaros becoming the IT Systems Engineer. Andrej Trkov has been confirmed as a new member of the Nuclear Data Development Unit and we expect him to start in the New Year.

Robin Forrest

Isotope Browser:
A Nuclear Data app for Android mobile devices



In July 2013, the Nuclear Data Section launched its first product aimed at mobile devices. Called Isotope Browser, the app gives properties of more than 4 000 nuclides and isomers and can be accessed on all Android portable devices, such as smartphones and tablets.

A Periodic Table of Elements is included to allow easy selection, and filter criteria on half-life, decay mode, radiation type and energy can be selected. The summary data are presented in an easy scrolling list, with a details page for each nuclide containing web links to the data sources and additional information.

Data are taken from the most recent and reliable sources, such as the ENSDF - Evaluated Nuclear Structure Data Files - and the Atomic Mass Data Centre, and updates of the app will be released when new data are available. Optimal search-and-retrieve performance is achieved with an embedded database, meaning that no network connection is required.

The Isotope Bowser is the first Android app at the IAEA, one of the many contributions of the Nuclear Data Section to the IAEA's continuing efforts to provide data users in Member States with more sophisticated and quicker access to numerical data needed for their peaceful uses of nuclear applications.

Our plan is to keep developing the Isotope Browser by adding new features. We are also investigating options for a further new app, a likely candidate could be one dedicated to atomic and molecular data. If you have any comments or suggestions, please send us an email at nds.contact-point@iaea.org.

For more information on the **Isotope Browser** *Android app, please access* http://play.google.com/store/apps *and search for "isotope browser" to be able to see all the features available and if you have an Android device, to download.*

Computer Codes and Data Libraries – News

Databases and libraries are available for download or on CD-ROM/DVD cost-free on request
Please find a complete list of all computer codes and data libraries available from NDS on:
http://www-nds.iaea.org/cd-catalog.html

EXFOR – a unique collection of the published experimental nuclear reaction data. The International Network of Nuclear Reaction Data Centers (NRDC) and NDS work to improve completeness and correctness of the stored data. Recently, we have concentrated on the collection and updating of cross section data for standard reactions, monitor and isotope production reactions for medicine, activation reactions for dosimetry and safety, neutron-delayed data, spectrometer response functions and time-of-flight data for the resonance energy range.
The hyperlinking was firstly established between EXFOR and the reference nuclear structure database ENSDF. Now it allows users to check and compare the nuclear structure information stored in EXFOR (such as parameters of the excited levels, gamma transition, and decay modes) with the reference information available in the nuclear structure database.
NDS welcomes feedback and recommendations from external users on the scope and quality of EXFOR as well as on access and retrieval of data provided via the internet or by standalone software.

IRDFF – latest version 1.02 of the dosimetry cross sections database for reactor and fusion applications up to energy 60 MeV was processed by an updated version of the NJOY code in ACE format and was made available for use with the Monte-Carlo codes:
https://www-nds.iaea.org/IRDFFtest/.

JENDL-4u2 – our web retrieval systems now provides access to the latest version of the Japanese Evaluated Neutron Data Library (JENDL). This is an updated version and contains newly evaluated nuclides following the release of JENDL-4.0. The library contains neutron cross section data in the incident energy range from 10^{-5} eV to 20 MeV for 406 nuclides.

FENDL-3 - the Fusion Evaluation Nuclear Data Library (FENDL) was the response of the IAEA to the need for a data library specifically designed for fusion applications. FENDL-3 consists of general purpose and activation parts, both of which contain neutron-, proton- and deuteron- induced files with a maximum energy of the incident particle at least equal to 60 MeV. After completion of the dedicated CRP, the library has been made available from the NDS webpage in different formats for practical use: ENDF, PENDF, ACE, MATXS, GENDF and GND.
https://www-nds.iaea.org/fendl3/

LiveChart – the web interface to Nuclear Structure and Decay Data. The underlying database is updated twice a year, when the master ENSDF database is released. This time new data were added for fission yields and thermal neutron cross sections, and a graphical depiction of parent-decay chains enriched the visual interface. LiveChart is available at
http://www-nds.iaea.org/livechart.

In Memoriam

Dick McKnight passed away on 28 August 2013. Dick was a nuclear engineer with over 38 years of service at Argonne, and an internationally recognized expert in the field of nuclear data validation and criticality experiments. He played a key role in CSEWG for many years serving as chair of the validation committee. Dick was a great source of wisdom for all around him. He was a wonderful and inspiring person to talk to and a good friend. He'll be dearly missed.

NDS Meeting Reports

Meeting reports, when finalised, available at http://www-nds.iaea.org/publications/

Technical Meeting (TM) of International Code Centre Network (CCN) Vienna, Austria, 6–8 May, 2013

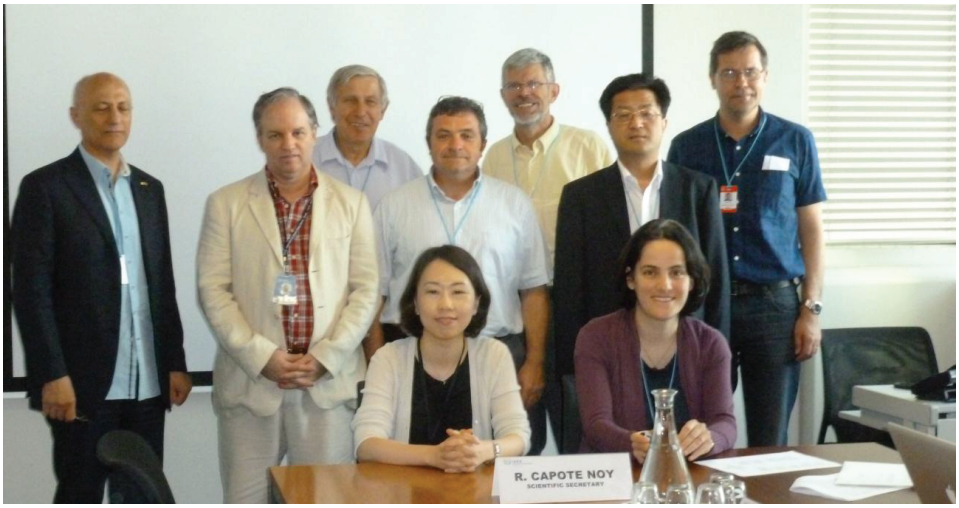
Scientific Secretary: H.K. Chung, 10 participants and IAEA staff.

Participants of the TM of International Code Centre Network (CCN).

The International Code Centres Network (CCN) was established to gather and provide access to computational codes and calculated atomic, molecular and plasma-surface interaction data relevant to fusion and plasma sciences. This third biennial TM gathered experts in the field of theoretical atomic structure, electron-atom scattering and electron-molecular scattering to discuss uncertainty estimates of calculated data sets. The third day of the meeting was held jointly with a meeting of the European electron-molecule collision network (eMOL) which was held from 8 to 10 May 2013 in Vienna to evaluate data for electron collisions with the water molecule. Participants agreed on the importance of critical assessment of theoretical atomic and molecular data and identified steps to estimate uncertainties in calculations of such data. Recommendations and conclusions of the meeting are available in the INDC(NDS)-0637 report.

Consultants Meeting (CM) on Auger Electron Emission from Nuclear Decay: Data Needs for Medical Applications Vienna, Austria, 9–10 May, 2013

Scientific Secretary: R. Capote Noy, 7 participants and IAEA staff.



Participants of the CM on Auger Electron Emission from Nuclear Decay: Data Needs for Medical Applications.

Radiotherapy is one of the major therapeutic methods to treat cancer. While external radiotherapy is broadly used, there is also an emerging modality that uses ionizing radiation emitted by a radioactive isotope directly delivered to the tumor. Delivery of radioisotope to the tumor or target can be done, for example, by monoclonal antibodies or via an antigenic target. There is a particular group of radionuclides which decay by emitting a shower of

low energy electrons, such radionuclides are generally known as Auger emitters. Decay and emission data of Auger electrons are poorly known.
The CM was convened to explore what sort of work is reasonable and feasible to produce data for Auger electron production in connection with internal radiotherapy applications. We understand that there is a strictly nuclear side to this problem, but that is not considered here; at this meeting we focused on the atomic and molecular decay process that follows the electron capture nuclear decay. Presentations by the consultants at the CM are available from IAEA-NDS web page: http://www-nds.iaea.org/index-meeting-crp/CM-Auger-2013/. Additional information is available in the summary report that will be published later this year as INDC(NDS)-0638. The report will be available online at http://www-nds.iaea.org/publications/.

First Research Coordination Meeting (RCM) on Testing and Improving the IAEA International Reactor Dosimetry and Fusion File (IRDFF) Vienna, Austria, 1–5 July, 2013

Scientific Secretary: S. Simakov, Chairman: A. Trkov; Rapporteur: L. Greenwood, 17 participants and IAEA staff.

Participants of RCM on Testing and Improving the IAEA International Reactor Dosimetry and Fusion File.

In accordance with the recommendations of the International Nuclear Data Committee in May 2012, the Nuclear Data Section of IAEA has initiated a new CRP (F41031, http://www-nds.iaea.org/IRDFFtest/) with the main goal to test, validate and improve the International Dosimetry Library for Fission and Fusion (IRDFF) library. The output of this CRP will be a reference dosimetry database of cross sections and decay data with a proper documentation. It will address the needs of fission, fusion and accelerator driven applications. The attendees discussed the objectives of the whole CRP, presented their contributions and elaborated consolidated recommendations and actions for implementation over the next 18 month period. The individual contributions and joint decisions taken during this meeting are described in the summary report INDC(NDS)-0639.

Second Research Coordination Meeting (RCM) on Atomic and Molecular Data for State-resolved Modelling of Hydrogen and Helium and their Isotopes in Fusion Plasma Vienna, Austria, 3–5 July, 2013

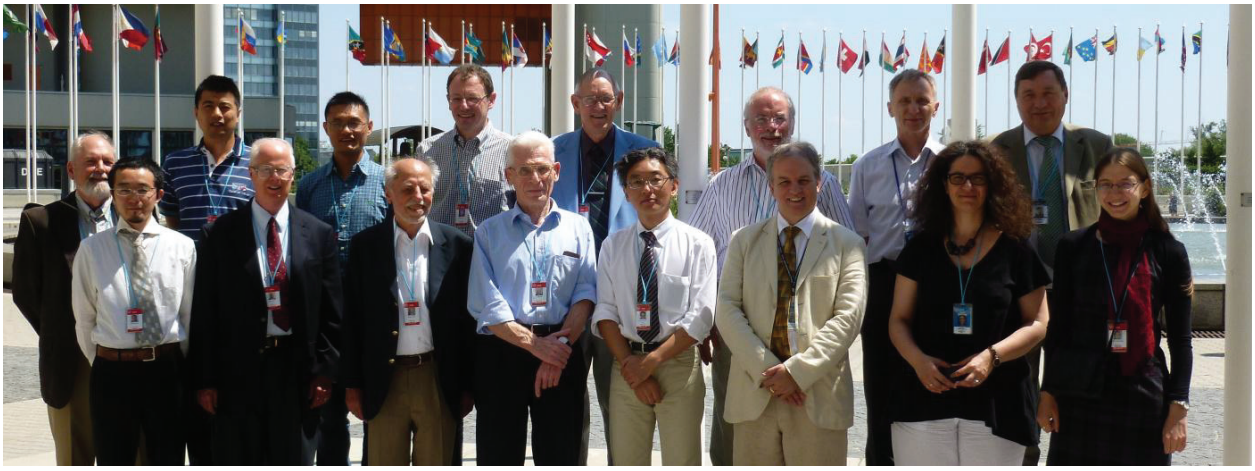
Scientific Secretary: B. Braams, 11 participants and IAEA staff.

The primary concern of this CRP is the production of a comprehensive recommended data collection for processes involving molecules and molecular ions of H and He, including effects of vibrational excitation and including all hydrogen isotopes. The data produced will be used for modelling power and particle control in the low temperature, high density plasma in the near-wall region of fusion experiments.

Participants of RCM on Atomic and Molecular Data for State-resolved Modelling of Hydrogen and Helium and their Isotopes in Fusion Plasma.

Technical Meeting (TM) Towards a New Evaluation of Neutron Standards Vienna, Austria, 8–12 July, 2013

Scientific Secretary: R. Capote Noy, 13 participants and IAEA staff.



Participants of TM Towards a New Evaluation of Neutron Standards.

The meeting was convened to bring together experts from the neutron standards community with the aim to define needed steps and agree a work-plan toward producing a new neutron standards (STD) evaluation. This is a logical extension of the IAEA Data Development project that has been running since 2008 to update the GMA database and STD experimental database. The main objectives of this project are to continuously and critically review new experiments for inclusion in the standards database, and to consider extensions in energy of some of the standards. Other goals are to study improved evaluation procedures and codes for performing the evaluations, maintain those codes, and investigate inclusion of reference data that are not as well-known as the standards but are being widely used as a reference in relative measurements of certain types of cross sections. Also included is an effort to improve evaluations of ^{235}U thermal and ^{252}Cf spontaneous fission neutron spectra. Presentations given at the meeting are available from http://www-nds.iaea.org/nds-technical-meetings/TM-Std-Jul-2013/ and the details of the meeting can be found in the report INDC(NDS)-0641.

First Research Coordination Meeting (RCM) on Reference Database for Beta-delayed Neutron Emission Evaluation Vienna, Austria, 26–30 August, 2013

Scientific Secretary: P. Dimitriou, 17 participants and IAEA staff.

The 1st RCM brought together participants of this new CRP to discuss and agree upon a detailed work plan for the next 18 months. After reviewing the current situation with regards to existing compilations and evaluations of delayed-neutron data, and after assessing the data needs for both reactor-based applications and basic nuclear sciences such as nuclear structure and astrophysics, the meeting concluded with a list of recommended actions for the generation of a database of experimental, evaluated, and recommended delayed-neutron data. Particular emphasis was placed on the need for performing appropriate validations of the microscopic delayed-neutron

data through detailed comparisons of the resulting integral data with other macroscopic data available in the currently used data libraries. More details, including the meeting's presentations, can be found at the CRP website http://www-nds.iaea.org/beta-delayed-neutron.
The summary report of the meeting is in preparation.

Participants of the RCM on Reference Database for Beta-delayed Neutron Emission Evaluation.

Workshop on EXFOR Compilation
Vienna, Austria, 27–30 August, 2013

Scientific Secretary: N. Otsuka, 13 participants and IAEA staff.

Participants of the EXFOR Compilation Workshop.

EXFOR compilation work is never a routine task. The coding rules and format are regularly updated in order to accommodate experimental data measured by modern technologies with sufficient information required by EXFOR users. In order to maintain the quality of EXFOR entries, NDS periodically organizes workshops for EXFOR compilers. "Uncertainty and covariance" was the main topic of this workshop. The participants studied basic concepts (e.g. probability distribution, correlation) and evaluation methodologies (e.g. least squares, weighted averages) so that they would be able to collect enough information from experimentalists. In addition to the plenary lectures, talks on specific measurements and evaluations were given by O. Gritzay, V. Semkova, S. Takács, and Zhang Yue. Another important subject of the workshop was new and updated EXFOR tools developed by data centers. Chen Guochang introduced a new Chinese digitizer (GDgraph) while A. Makinaga, G. Pikulina, S. Taova and V. Zerkin introduced updated editors, digitizers and web tools. Additionally two Indian PhD students (S. Badwar, R. Ghosh) presented Indian activities on EXFOR compilation, nuclear data measurements as well as their experiences with compilation tools. These presentations are available at the NRDC web page (http://www-nds.iaea.org/nrdc/wksp_2013/).

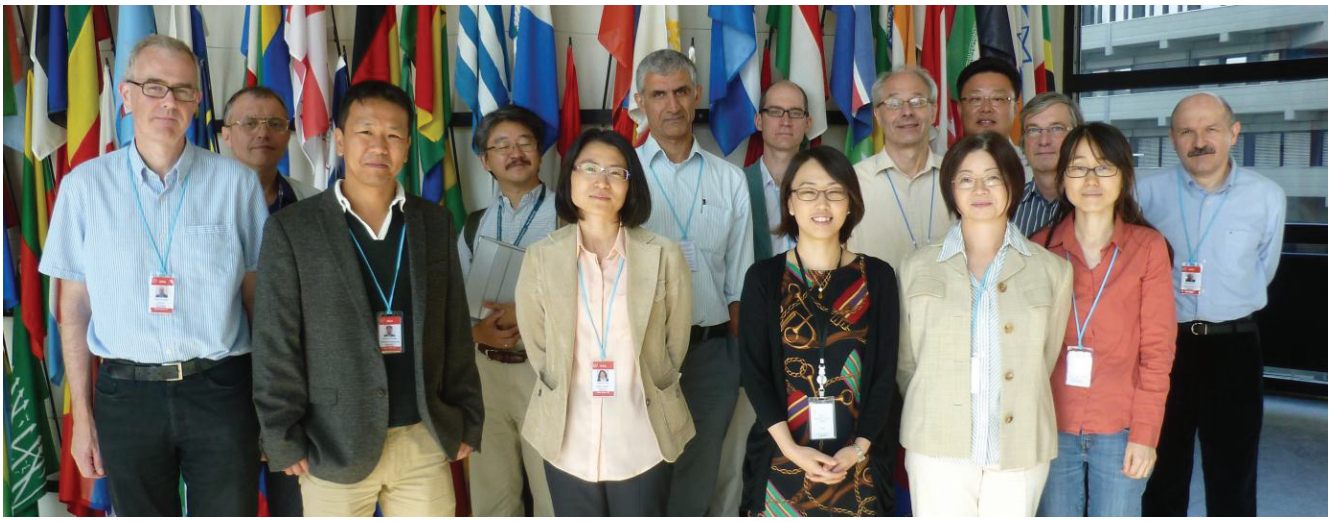
Second Workshop on Spectral Line shapes in Plasmas Code Comparison
Vienna, Austria, 5–9 August, 2013

Scientific Secretary: H.K. Chung, 13 participants and IAEA staff.

The 2nd Spectral Line shapes in Plasmas Code Comparison Workshop was held at the K+K Maria Theresia Hotel the week 5–9 August 2013 in cooperation with the IAEA after the successful launch of the first such workshop in 2012. Experts in the field of atomic line shape theory submitted their results prior to the workshop on 12 cases which include line shapes for diagnostics of tokamak plasmas, laser produced plasmas and astrophysical plasmas. Participants compared results during the workshop and discussed the origins of discrepancies among their results. Workshop results and conclusions will be published in a special volume of the new open access journal "Atoms".

Technical Meeting (TM) on
Technical Aspects of Atomic and Molecular Data Processing and Exchange
(22. Meeting of the Atomic and Molecular Data Centres)
Vienna, Austria, 4–6 September, 2013

Scientific Secretary: H.K. Chung, 11 participants and IAEA staff.



Participants of the 22. Technical Meeting of Technical Aspects of Atomic and Molecular Data Processing and Exchange.

Representatives of the IAEA Atomic and Molecular Data Centres Network meet biennially to review progress in atomic and molecular data related activities in the data centres and to review and coordinate the work plans related to data issues for the next period. The issues of discussion included coordinated activities in data evaluation, bibliographical databases, data exchange format using XML schema (XSAMS), priorities of data needs for fusion applications, and new database developments. Detailed plans for joint work and for future meetings and workshops were formulated to address these issues further. A meeting report is in preparation.

Consultants Meeting (CM) on
EXFOR Data in Resonance Region and Spectrometer's Response Function
Vienna, Austria, 8–10 October, 2013

Scientific Secretary: V. Semkova, 7 participants and IAEA staff.

The purpose of the meeting was to discuss the compilation in the EXFOR data library of neutron induced reaction cross section data in the resonance energy range. To provide an optimum use of such data, it is necessary to have the experimental observables such as neutron time-of-flight spectra transmission, reaction yields, etc., combined with the specific experimental data needed to determine the spectrometers' response function. To properly process and evaluate data, additional experimental details such as measurement technique, detector details and sample characteristics are needed. The information required to be compiled together with examples of response functions of the major TOF facilities such as GELINA, J-PARC, n_TOF, ORELA and RPI will be made available through the meeting summary report INDC(NDS)-0647 and webpage: http://www-nds.iaea.org/index-meeting-crp/CM-RF-2013/. The data received from the participants of the meeting will allow the NRDC community to develop the rules and formats for compilation of the observables resulting from the TOF measurements.

Participants of the CM on EXFOR Data in Resonance Region and Spectrometer's Response Function.

ICTP/IAEA Workshop on Nuclear Data for Science and Technology: Medical Applications Trieste, Italy, 30 September–4 October, 2013

Directors: R. Capote Noy (IAEA) and S.M. Qaim ((Institut fur Nuklearchemie Forschungszentrum, Juelich, Germany); Local organizer: L. Bertocchi, 26 participants.

Participants of the Joint ICTP-IAEA Workshop on Nuclear Data for Science and Technology: Medical Applications.

The one-week workshop continued a series of "Nuclear Data for Science and Technology" workshops initiated in 1999 and continued in 2007. About 20 trainees from various countries attended the workshop. Recent years have witnessed a rapid development and increasing use of nuclear radiation in medicine both for diagnostic and therapeutic purposes. New radioisotopes have been introduced for diagnosis and therapeutic processes. Radio-labelled compounds can be used to follow and quantify the metabolism of newly developed drugs.

Data needs related to the safe and sustainable production of medical radioisotopes is of paramount importance for the IAEA NDS programme. The Workshop was a unique opportunity for participants to gain extensive and up-to-date training on the use and understanding of nuclear data of relevance to the application of modern nuclear technology in therapy and diagnostics. More information about the Workshop can be obtained from: http://cdsagenda5.ictp.it/full_display.php?ida=a12207.

Forthcoming Events

Final (third) RCM on "Reference Database of Cross Sections for Particle-induced Gamma Ray Emission (PIGE) Spectroscopy" will be held from 7–11 April 2014, at the IAEA Headquarters in Vienna, Austria.

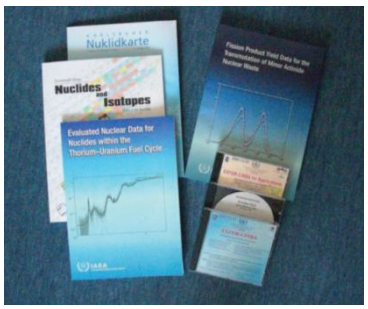
CM on Compilation and Evaluation of Gamma-Ray Data, 4–6 November 2013, Vienna: the purpose of this meeting is to investigate the feasibility of updating the earlier work on the IAEA Photonuclear Data Library in 2000 (IAEA-TECDOC-1178), and extending the database to include continuum gamma ray data used to investigate the statistical properties of the nucleus.

IAEA/ICTP Workshop on Nuclear Structure and Decay Data (NSDD): Theory and Evaluation, 24–28 March 2014: - the seventh in a series of Workshops aiming at providing extensive and up-to-date training on the evaluation of nuclear structure and decay data as adopted by the Network of NSDD evaluators to interested scientists from all over the world. The previous workshop involved practical afternoon sessions that resulted in the evaluation of mass-chain A=211.

Selected Charts, Reports and Documents

All INDC series reports are available online:

http://www-nds.iaea.org/publications/



Recent Releases:

INDC(NDS)-0603 EMPIRE-3.2 Malta - Modular System for Nuclear Reaction Calculations and Nuclear Data Evaluation, prepared by M. Herman, R. Capote, M. Sin, *et al*., August 2013.

INDC(NDS)-0632 Summary Report of the First Research Coordination Meeting on Data for Erosion and Tritium Retention in Beryllium Plasma-Facing Materials, Vienna, 26–28 September 2012, prepared by B.J. Braams, April 2013.

INDC(NDS)-0633 Summary Report of an IAEA Technical Meeting of International Network of Nuclear Reaction Data Centres, Vienna, 23–25 April 2013, prepared by N. Otsuka, July 2013.

INDC(NDS)-0636 Summary Report of the First Research Coordination Meeting on Light Element Atom, Molecule and Radical Behaviour in the Divertor and Edge Plasma Regions, 20–22 March 2013, prepared by B.J. Braams, H.-K. Chung, May 2013.

INDC(NDS)-0637 Summary Report of the IAEA Technical Meeting of International Code Centre Network (CCN), 6–8 May 2013, prepared by H.-K. Chung, July 2013.

INDC(NDS)-0639 Summary Report of the First Research Coordination Meeting on Testing and Improving the International Reactor Dosimetry and Fusion File (IRDFF), 1–5 July 2013, prepared A. Trkov, L.R. Greenwood, S. Simakov, September 2013.

INDC(NDS)-0641 Summary Report of the IAEA Technical Meeting Toward a New Evaluation of Neutron Standards, prepared by V.G. Pronyaev, A.D. Carlson, R. Capote Noy, August 2013.

INDC(NDS)-0642 Program OPTMAN Version 14 (2013), User's Guide, prepared by E.Sh. Soukhovitskii, G.B. Morogovskij, R. Capote Noy, S. Chiba, J.M. Quesada, August 2013.

Nuclear Data Sheets *Special Issue on Nuclear Reaction Data, Vol. 113, No.12 (2012).* Editor: P. Oblozinsky, Assistant Editor: B. Pritychenko. Containing seven papers covering the nuclear reaction code TALYS and its innovative implementation.
Limited number of hard copies available on request.

2012 Atomic Mass Data Evaluation published in *Chinese Physics C:High Energy Physics and Nuclear Physics*, **36** (12)1287-1602 (2012) as *"The AME2012 atomic mass evaluation"*, by G. Audi, M. Wang, A.H. Wapstra, F.G. Kondev, M. MacCormick, X. Xu and B. Pfeifer. NNDC Q-value Calculator is based on the AMDC 2012 Atomic Mass Evaluation.
Limited number of hard copies available on request.

Also Available:

Chart of the Nuclides 2010 JAEA Nuclear Data Centre.

Chart of the Nuclides *(Wall chart) prepared by Knolls Atomic Power Laboratory (KAPL) and distributed by Lockheed Martin (17. edition, revised 2009).* Available cost-free on request only for **teachers and scientists from developing countries.**

Chart of the Nuclides *(Book) prepared by Knolls Atomic Power Laboratory (KAPL) and distributed by Lockheed Martin (17. edition, revised 2009).* Available cost-free on request only for **teachers and scientists from developing countries.**

Karlsruher Nuklidkarte *Wall chart of the nuclides, 7. edition (2006).* Available cost-free on request only for **teachers and scientists from developing countries**.

Karlsruher Nuklidkarte *Desk chart of the Nuclides, 7. edition (2006).* Available cost-free on request only for **teachers and scientists from developing countries**.

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Staff Items

For all NDS staff details: http://www-naweb.iaea.org/napc/nd/aboutus.asp.

In May 2013 **Andras Vasaros** took over the post of the IT Systems Engineer. Andras will continue providing system support to the NDS, liaise with the Computer Division and deal with non-standard software and the contents of the data servers.

In January 2014 **Andrej Trkov** will be taking over the post of the Nuclear Physicist in the Nuclear Data Development Unit of the NDS previously held by Roberto Capote Noy who is now the Unit Head. Andrej's knowledge of the IAEA and in-house procedures from his previous employment in NDS, various contracts, meeting participation, scientific work and papers, will be a great asset to the work of the Unit/Section.

This newsletter, as well as previous issues, can be accessed electronically at:
http://www-pub.iaea.org/books/IAEABooks/View_Newsletters/60/Nuclear-Data-Newsletter

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For information regarding on-line services, contact: B. Pritychenko: pritychenko@bnl.gov
For information regarding general NNDC services, contact: M. Blennau: blennau@bnl.gov

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NEA Data Bank, OECD Nuclear Energy Agency, Le Seine Saint-Germain, 12 blvd des Iles,
F-92130 Issy-les-Moulineaux, France.
Tel. +33 1 4524 (plus extension); Fax +33 1 45241110;
Email: Emmeric.Dupont@oecd.org ordata@oecd-nea.org; Worldwide Web: http://www.oecd-nea.org/databank/ contact: E. Dupont, ext. 1084.

For services to the customers from the former USSR:
Neutron data: Russia Nuclear Data Center, Centr Jadernykh Dannykh (CJD), Fiziko-Energeticheskij Institut, Ploschad Bondarenko,
249020 Obninsk, Kaluga Region, Russian Federation.
Tel. +7 08439-9-8982; Fax +7 095-230-2326;
Email: blokhin@ippe.ru; Worldwide Web: http://www.ippe.ru/podr/cjd; contact: A.I. Blokhin.
Photonuclear data: Centre for Photonuclear Experiments Data, Centr Dannykh Fotoyadernykh Eksperimentov (CDFE),
Skobeltsyn Institute of Nuclear Physics, Lomonosov Moscow State University, Leninskie Gory, 119 922 Moscow, Russian Federation.
Tel. +7 495-939-3483; Fax +7 495-939-0896;
Email: varlamov@depni.sinp.msu.ru; Worldwide Web: http://cdfe.sinp.msu.ru/; contact: V.V. Varlamov.

For services to customers in China:
China Nuclear Data Center, China Institute of Atomic Energy, P.O. Box 275(41), Beijing 102413, China.
Tel. +86 10-6935-7275; Fax +86 10-6935-8119; Email: gezg@ciae.ac.cn; contact: Ge Zhigang.

Computer codes of US origin to all countries (there are charges and release restrictions):
Radiation Safety Information Computational Center (RSICC), Oak Ridge National Laboratory,
P.O. Box 2008, Oak Ridge, TN 37831-6003, USA.
Tel. +1 865-574-6176; Fax +1 865-241-4046;
Email: pdc@ornl.gov

Computer codes of non-US origin to all countries (there may be release restrictions):
NEA Data Bank (see above)
Email: Juan.Galan@oecd.org; contact: J. Galan, ext. 1008.

IAEA Nuclear Data Section offers data centre services primarily to non-OECD countries
(except Russian Federation and China, see above). However, most products advertised in this Newsletter, specifically INDC reports, IAEANDS-documents, etc., are provided upon request to customers in all countries.
IAEA-NDS on-line services at Worldwide Web: http://www-nds.iaea.org/
Users in India, China and neighbouring countries may use
IAEA-NDS mirror at Worldwide Web: http://www-nds.indcentre.org.in (India); http://www-nds.ciae.ac.cn/ (China).

Impressum

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