



**International Conference on  
Fast Reactors and Related Fuel Cycles:  
Safe Technologies and Sustainable Scenarios  
(FR13)**

**Paris, France  
4–7 March 2013**

*Organized by the*  
International Atomic Energy Agency (IAEA)

*Hosted by the*  
Government of France  
*through the*  
French Alternative Energies and Atomic Energy Commission (CEA)  
*and the*  
French Nuclear Energy Society (SFEN)

**Announcement and Call for Papers**

## **A. Introduction**

The last major international conference on fast reactors, FR09, was held in Japan in 2009. The International Atomic Energy Agency (IAEA) now proposes, almost four years later, to bring the fast reactor and related fuel cycle community together again.

The nuclear industry has from its inception recognized the important role of fast reactors and related fuel cycles in ensuring the long term sustainability of nuclear power. Fast reactors operated in a closed fuel cycle help to improve the utilization of resources — both fissile and fertile materials — used in nuclear fuels. This improvement is possible because fast reactors can breed fissile materials and, using modern fuel cycle technologies, recycle materials bred in these reactors. In this way, fast reactors and related fuel cycle technologies can make an enormous contribution to the sustainability of nuclear energy production. They have the potential to produce a hundred times more energy from natural uranium resources. At the same time, fast neutrons favour fission of heavy atoms, instead of capture, so they can also be used to transmute minor actinides (MA) thereby reducing the demands on geological repositories for the final disposal of nuclear waste.

Many countries are actively developing reactor, coolant, fuel and fuel cycle technologies. Reactor technologies under development include sodium- , lead- , gas-, molten salt- and even supercritical water-cooled systems and technologies and accelerator-driven systems. In parallel, several demonstration projects, ranging from small to large scale, are under study or construction.

For such nuclear energy systems to become viable for industrial deployment in the coming decades, designers will have to increase their level of safety in order to gain public acceptance. Harmonization of safety standards at the international level could play a leading role in achieving these goals.

## **B. Objectives**

The conference will provide a forum to exchange information on national and international programmes, and more generally new developments and experience, in the field of fast reactors and related fuel cycle technologies. A first goal is to identify and discuss strategic and technical options that may have been proposed by individual countries or companies. Another goal is to promote the development of fast reactors and related fuel cycle technologies in a safe, proliferation resistant and economic way. A third goal is to identify gaps and key issues that need to be addressed in relation to the industrial deployment of fast reactors with a closed fuel cycle. A fourth goal is to engage young scientists and engineers in this field, in particular with regard to the development of innovative fast reactor concepts.

## **C. Topics**

The IAEA welcomes high quality contributions, both academic and practice-based, that fall under the umbrella of the following topics:

1. National or multi-national strategy and programmes

2. Fast reactor safety:
  - Safety by design approaches, safety of equipment
  - Harmonization of safety requirements and approaches
  - Probabilistic and deterministic approaches and studies
  - Severe accidents
3. Fuel cycle options and processes
  - Safety of processes and facilities
  - Waste minimization
  - Partitioning and transmutation
4. Reactor concept designs
  - System design
  - Cores, coolant technology
  - Design and qualification of components
  - In-service inspection and repair, instrumentation
5. Economics, performance and scenarios of industrial deployment
  - Transition to fast reactors
  - Management of materials
  - Reliability, availability, public acceptance
  - Business case for investment
6. Proliferation resistance and physical protection
7. Fast reactor fuels
  - Driver fuels, MA bearing fuels and targets
  - Design, manufacturing, thermo-physical properties, irradiation experiments and post-irradiation examinations
8. Structural materials
  - Qualification of materials for early deployment
  - Innovative materials for improved performance
9. Experiments, tests and simulation
  - Modelling, verification, validation
  - Recent experimental results or projects
  - Fundamental issues

#### 10. Operating and decommissioning experience

- Safety feedback
- Radiological impact

#### 11. Skills, capabilities, professional development, knowledge management, international networks

## D. Conference Structure

The conference programme will consist of an opening plenary session, a general plenary session, several parallel technical sessions, a poster session, two panels, and a closing plenary session.

## E.1. Contributed Papers and Posters

All papers — other than invited review papers — must present original work and must not have been published elsewhere.

### (a) Submission of abstracts

Abstracts must be sent electronically (no paper copies) using the template provided on the conference website (pdf format) to: [FR13.papers@iaea.org](mailto:FR13.papers@iaea.org) by **31 August 2012**.

The abstract should not exceed 150 words. The abstract must be in English and give sufficient information on the contents of the proposed paper to enable the Paper Selection Committee to evaluate it. Introductory and general matters should not be included. Please use the sample abstract on the conference website.

**In addition**, the abstract must also be submitted, together with a completed Form for Submission of a Paper (Form B) and the Participation Form (Form A), to one of the competent official authorities of the participant's country (e.g. Ministry of Foreign Affairs or National Atomic Energy Authority), or to an organization invited to participate, for subsequent transmission to the IAEA (preferably electronically) to: [official.mail@iaea.org](mailto:official.mail@iaea.org), to reach the IAEA also by **31 August 2012**.

**IMPORTANT:** only abstracts that have been received by the above deadline and through the appropriate official authority will be considered.

### (b) Acceptance of papers for oral presentation and poster presentation

In order to provide ample time for discussion, the number of papers that can be accepted for oral presentation is limited. If the number of relevant and high quality papers submitted for selection exceeds the acceptable number, some of them will be selected for poster presentation.

Authors will be informed by 30 September 2012 whether their papers have been accepted for submission of a full paper and, as appropriate, for presentation at the conference, either orally or as a poster. The IAEA, however, reserves the right to refuse the presentation or publication of any paper that does not meet expectations based on the information given in the abstract. Full papers will be **distributed in a compiled electronic format (unedited) free of charge to all participants upon**

**registration.** Questions relating to the contributed papers can be raised at the appropriate technical session or panel discussion.

(c) Submission of full papers

Full papers must be sent electronically (no paper copies) in Microsoft Word format directly to: [FR13.papers@iaea.org](mailto:FR13.papers@iaea.org) by **30 November 2012**.

The full paper should not exceed ten pages. Guidelines and a template for the preparation and submission of full papers will be available on the conference website.

(d) Presentation of posters

Guidelines for the preparation of a poster will be made available on the conference website in due course.

## E.2. Conference Proceedings

The proceedings containing summaries of the plenary and technical sessions as well as full papers presented at the conference will be published by the IAEA as soon as possible after the conference. The proceedings can be ordered, at a special discounted price, during the conference.

## F. Participation and Registration

All persons wishing to participate in the conference are requested to register online in advance (see Section O). **In addition**, they must send a completed Participation Form (Form A), the Form for Submission of a Paper (Form B) (if applicable), and the Grant Application Form (Form C) (if applicable) as soon as possible to the competent official authority for subsequent transmission to the IAEA (preferably electronically) to: [official.mail@iaea.org](mailto:official.mail@iaea.org).

A participant will be accepted only if the Participation Form is submitted to the IAEA through one of the **competent official authorities**. These authorities include:

- Ministry of Foreign Affairs;
- National Atomic Energy Authority; and
- Invited organizations (European Union, the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development).

Participants whose official designations have been received by the IAEA will receive further information on the conference at least three months before the start of the conference. This information will also be available on the conference website.

## G. Expenditures/Grants

No registration fee is charged to participants.

The IAEA is generally not in a position to bear the travel and other costs of designated participants in the conference. The IAEA has, however, limited funds at its disposal to help meet the cost of attendance of selected specialists from Member States eligible to receive technical assistance under the IAEA's technical cooperation programme. Such assistance may be offered, upon specific request, provided that in the IAEA's view a participant will make an important contribution to the conference. In general, not more than one grant will be awarded to any one country.

If Governments wish to apply for a grant on behalf of one of their specialists, they should address specific requests to the IAEA (preferably electronically to: [official.mail@iaea.org](mailto:official.mail@iaea.org)) to this effect. Governments should ensure that applications for grants are:

1. Submitted by **31 August 2012** at the latest;
2. Accompanied by a duly completed and signed Grant Application Form (Form C);
3. Accompanied by a completed Participation Form (Form A); and
4. Accompanied by a completed Form for Submission of a Paper (Form B) (if applicable).

Applications that do not comply with the above conditions cannot be considered.

Approved grants will be issued in the form of a lump sum payment that usually covers **only part of the cost of attendance**.

## H. Distribution of Documents

A preliminary programme will be posted on the IAEA conference website as soon as possible (see Section O). The final programme and the electronic compendium of papers will be available free of charge upon registration at the conference.

## I. Exhibitions

Space will be available for display/exhibits by commercial vendors during the conference. This space is perfectly located in the lobby between the meeting rooms. Interested exhibitors should contact the Local Organizing Committee by email as soon as possible:

Ms Sylvie Delaplace  
French Nuclear Energy Society (SFEN)  
5, rue des Morillons  
F-75015 Paris, France  
Email: [FR13@sfen.fr](mailto:FR13@sfen.fr)

## J. Working Language

The working language of the conference will be English.

## K. Conference Venue and Accommodation

The conference will be held at the Palais des Congrès de Paris, Paris, France.

Detailed information on accommodation and other administrative matters will be sent directly to all designated participants approximately three months before the conference. This information will also be made available on the conference website, in due course.

## L. Visas

Designated participants who require a visa to enter France should submit the necessary application to the nearest diplomatic or consular representative of France as soon as possible. Please note that France is a Schengen State and therefore persons who require a visa will have to apply for a Schengen visa. In States where France has no diplomatic mission, visas can be obtained from the consular authority of a Schengen Partner State representing France in the country in question.

## M. Key Deadlines and Dates

- 31 August 2012 Submission of **abstracts** including Forms A and B through official channels to the IAEA ([official.mail@iaea.org](mailto:official.mail@iaea.org)). Advance copy to: [FR13.papers@iaea.org](mailto:FR13.papers@iaea.org)
- 31 August 2012 Submission of **grant applications**: Forms A and C through official channels to the IAEA ([official.mail@iaea.org](mailto:official.mail@iaea.org))
- 30 Sep 2012 Notification of acceptance of abstract
- 30 Nov 2012 Submission of **full papers** (only upon request by the IAEA) to: [FR13.papers@iaea.org](mailto:FR13.papers@iaea.org)

## **N. Conference Secretariat**

### **General postal address of the IAEA Secretariat:**

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### **Administration and organization (IAEA):**

#### **Ms Martina Khaelss**

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretaries and correspondence on administrative matters to the IAEA's Conference Services Section.

## **O. Conference website**

Please visit the IAEA conference website regularly for new information regarding this conference:

<http://www-pub.iaea.org/iaeameetings/41987/FR13>