



School on Physics and Technology of Fast Reactor Systems

9 – 20 November 2009

(Miramare – Trieste, Italy)

The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, in co-operation with the International Atomic Energy Agency (IAEA), Vienna, Austria, is organizing a School on Physics, Technology and Applications of Fast Reactor (FR) Systems, to be held at ICTP, Trieste, from **9 to 20 November 2009**.

Fast reactor systems can generate electricity and breed additional fissile material for future fuel stocks. In addition to plutonium, fast reactors could be used to utilize minor actinides, thereby reducing the volume, radiotoxicity and decay heat of high level waste for disposal in the geologic repository. Hence, for the sustainability of the nuclear option, currently there is worldwide renewed interest in fast reactor and closed fuel cycle research and technology development.

The scope of the School is education, training and information exchange. Participants will be familiarized with the physics, materials and engineering aspects of fast reactor systems R&D and design. A comprehensive review of the fast-fission reactor designs and of the innovative fuel cycles presently under consideration will be given, including the impact on the geologic repository.

PROGRAMME:

The School will consist of lectures, computer demonstrations, tutorials and exercise sessions. Participants will also be invited to prepare posters of their own research activity.

The participants will study the theoretical foundation of all the aspects of fast reactor design (critical and sub-critical) and identify the most problematic areas, as well as the limitations of the simulation methods presently used. The students will be familiarized with the modern theoretical models used to predict nuclear reaction cross sections. They will study the principles of the evaluation methodology and become acquainted with the existing data libraries and the data processing. The students will also be familiarized with fast reactor fuels, related fuel cycle options and radiation damage of fast reactor fuel and core structures. Based on the discussion of the impact of the present uncertainties on the performance of innovative fast reactor systems, the needs for data and methods development and validation work will be identified.

PARTICIPATION:

Scientists and engineers from all countries which are members of the United Nations, UNESCO or IAEA may attend the activity [subject to approval by the School Directors](#). They should hold a university degree or post graduate degree/diploma in nuclear physics, reactor physics, nuclear engineering, or related subjects. As the school will be conducted in English, participants should have an adequate working knowledge of that language. Although the main purpose of the Centre is to help research workers from developing countries, through a programme of training activities within a framework of international cooperation, graduate students and post-doctoral scientists from developed countries would equally benefit from the School and are encouraged to apply.

As a rule, travel and subsistence expenses of the participants should be borne by the home institution. Every effort should be made by candidates to secure support for their fare (or at least half-fare). However, limited funds are available for some participants who are nationals of, and working in, a developing country, and who are not more than 45 years old. Such support is available only for those who attend the entire activity. There is no registration fee.

Request for Participation

The application form can be accessed at the activity website <http://agenda.ictp.it/smr.php?2055>. Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form.

*in co-operation with
International Atomic Energy Agency*

DIRECTORS:

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FAST REACTOR R&D TOPICS:

Physics and Design Studies
General Concept and System Studies
Sub-system Studies
Nuclear Data
*Fuel Development: Design, Fabrication
and Properties*
Advanced Fuel Cycles

Deadline for

requesting participation:

31 July 2009

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