

VENUE & ACCOMMODATION

The Meeting will be hosted by Institute for Energy, Joint Research Centre of European Commission (IE-JRC-EC) Ispra (Italy). Delegates will be advised to book accommodation in recommended hotel, where a block reservation has been made.

Technical visit at Ispra laboratories will be organised, however prior security clearance will be needed in order to get appropriate permission. Further details regarding local transport possibilities, accommodation, technical tour and social event will be provided to participants on the meeting website.

VISA

Designated participants who require a visa to enter Italy should submit the necessary application form in due time to the nearest diplomatic or consular representative of Italy.

REGISTRATION

There is no registration fee. Organisers will open a website for on-line registration by middle of October 2011. Further instructions and details will be available there.

LANGUAGE

The working language of the meeting will be English. All communications, abstracts, and papers must be sent in English.



GENERAL CHAIR

B. RAJ IGCAR (India)

PROGRAM COMMITTEE

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MAIN TOPICS

- Pathways to R&D of new structural materials for nuclear reactors with emphasis to fast reactors
- Qualification of structural materials for fusion advanced in-vessel concepts
- Progress of materials development and qualification of materials for fusion applications
- Radiation damage phenomena and modelling of material properties under irradiation
- Advanced testing methods and harmonisation of new techniques
- Chemical compatibility, microstructure and mechanical properties of structural materials
- Pending R&D issues related to structural material of Broader Approach and Gen-IV reactor systems



IAEA
International Atomic Energy Agency
Atoms for Peace



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Atoms for Peace

2nd JOINT IAEA - EC TOPICAL MEETING
ON

DEVELOPMENT OF NEW STRUCTURAL MATERIALS FOR ADVANCED FISSION AND FUSION REACTOR SYSTEMS

hosted by

**JOINT RESEARCH CENTRE OF
THE EUROPEAN COMMISSION**

**Ispra (Italy)
16 - 20 April 2012**

In cooperation with



REGISTRATION: January 10, 2012
ABSTRACT: January 10, 2012
FULL PAPER: March 15, 2012

BACKGROUND

Materials performance and reliability are key issues for the safety and competitiveness of future nuclear installations, both fusion and fission designs. Generation IV nuclear systems for increased sustainability, advanced systems for non-electrical uses of nuclear energy, partitioning and transmutation systems, as well as thermo-nuclear fusion systems. These systems are designed for high thermal efficiency and optimized utilization of fuel combined with minimized nuclear waste. The demonstration of individual reactor concepts also requires the development and qualification of new high temperature structural materials with improved radiation and corrosion resistance. To achieve the challenging materials performance parameters, focused research and targeted testing of new candidate materials are necessary. New classes of materials with improved microstructural features, such as fibre-reinforced ceramic composite materials, oxide dispersion strengthened steels or advanced ferritic-martensitic steels are quite promising since they combine good radiation resistance and corrosion properties with high-temperature strength and toughness. In view of a successful and timely deployment of demonstrators, both fusion and fission reactors, new structural materials have to be qualified during the next decade. Besides research work related to the material engineering and metalurgy, strong supported by computer modelling and advanced materials characterisation techniques, have to be considered in order to accelerate the development of new structural materials.

The scope of the meeting is information exchange and cross-fertilisation of various disciplines, including an overview of recent status of world-wide R&D activities. A comprehensive review of the designs parameters of fission as well as fusion reactor systems, of the innovative materials concepts presently under consideration, and of system specific structural materials aspects will be given. Special emphasis is given to the application of nuclear techniques in the development and qualification of new structural materials and on-going Round-Robin testing carried out in the framework of International Coordinated Research.

OBJECTIVES AND OUTPUTS

The purpose of the meeting is to provide a platform for detailed presentations, technical discussions and exchange of results in order to foster closer cooperation in specific research areas. The format of the meeting will be invited and contributed oral presentations in sessions devoted to special topics, with subsequent discussions. An electronic projector with a computer capable of reading CDs and memory sticks will be available (Power Point or Acrobat recommended). The official language of the meeting is English. No interpretation will be provided. The meeting will start at 14:00 on 16 April 2012 and will be concluded by 15:00 on 20 April 2012. The outcome of the meeting will be in the form of proceedings which summarise the participants' contributions and will be published as a selection of papers as a special issue of **Journal of Nuclear Materials**.

PARTICIPATION

In order to participate in the meeting, the following steps must be completed:

(i) On-line registration: registration is open for all interested participants; however, all further steps specified below must be completed in order for final registration to be accepted. Persons from EU, IAEA Member States or invited international organizations are eligible to attend. Participants should be persons actively involved in the subject matter of the meeting. The registration to be done online through the web site.

(ii) Abstract submission : persons wishing to participate must submit an abstract, which is maximum one page in total length, in electronic format directly TO: Peter.Haehner@jrc.nl and A.Zeman@iaea.org. Acceptable file format is MS Word (doc or rtf format) which is a maximum of one page in total length. **Abstract must be received by 10 January 2012.** All received abstracts will be evaluated by the Scientific Committee, and authors informed of the **acceptance of their contributions by e-mail, by 30 January 2012.** Main specification of abstract: A4 size (210 x 297 mm) portrait, margins 25 mm all around, Times New Roman font with size 12 pt. Required

structure: title, authors names and affiliations and main text, email contact of corresponding author.

The presentations should be submitted either as a Power Point, or Adobe PDF file during the registration on the first day of the meeting. All presentations will be converted as received, to an Adobe PDF file and placed on a CD-ROM for distribution to all participants. The program agenda and a book of abstracts will be prepared and e-mailed to all participants as PDF file attachments.

The **manuscript of the paper to be submitted by 15 March 2012.** Further information and guidelines (Author Instructions) for the preparation of the full-size paper will be communicated to the participants with the acceptance of the abstract.

ORGANISATIONAL MATTERS

The costs for the organization of the meeting are borne by the JRC-EC and IAEA organisers. No registration fee is charged to participants. As a general rule, organisers do not pay for participants' travel and accommodation expenses. However, block-booking of the hotel is arranged by local organisers, further instructions will be communicated to accepted participants.

We look forward to your active participation

