



INFORMATION SHEET

Joint EC- IAEA Topical Meeting on:

(F1-TR-37435)

Development of new structural materials for advanced fission and fusion reactor systems

hosted by



in cooperation with the



5 – 9 October 2009

Barcelona (Spain)

On-line registration available:
<http://meeting.iaea.org/Registration.aspx?meetingId=37435>

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BACKGROUND:

Materials performance and reliability are key issues for the safety and competitiveness of future nuclear installations: 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 will have to feature high thermal efficiency and optimized utilization of fuel combined with minimized nuclear waste. For the sustainability of the nuclear option, there is a renewed interest worldwide in new reactor systems, closed fuel cycle research and technology development, and nuclear process heat applications. This 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.

Recent developments regarding 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 implementation of design parameters, in particular for primary circuits, new structural materials have to be qualified during the next decade. To this end an international R&D effort is being undertaken. Recent progress in materials science, supported by computer modelling and advanced materials characterisation techniques, has the potential to accelerate the process of new structural materials development.

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 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.

The key topics of the meeting are following:

- Radiation damage phenomena and modelling of material properties under irradiation
- On-going challenges in radiation materials science
- Key material parameters and operational conditions of selected reactor designs
- Microstructures and mechanical properties of nuclear structural materials
- Pathways to development of new structural materials
- Qualification of new structural materials
- Advanced microstructural probing methods

Special emphasis is given to the application of nuclear techniques in the development and qualification of new structural materials.

EXPECTED OUTCOME OF MEETING

The outcome of the meeting will be in the form of proceedings which summarise the participants' contributions and will be published electronically on CD. Furthermore, it is envisaged to publish a selection of papers as a special issue of a peer-review journal.

MEETING FORMAT

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 5 October 2009** and will be concluded by **15:00 on 9 October 2009**.

PARTICIPATION

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

1) On-line registration

Online 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.

For online pre-registration please follow this link:

<http://meeting.iaea.org/Registration.aspx?meetingId=37435>

2) 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 CC: A.Zeman@iaea.org. The abstract must be text only and must contain the author's name, affiliation and e-mail address. Acceptable file formats are Microsoft Word, HTML, or plain text. The one page **abstract must be received by 11 June 2009**. The abstracts will be evaluated by the Scientific Committee, and authors informed of the **acceptance of their contributions by e-mail, by 3 July 2009**. The program agenda and a book of abstracts will be prepared and e-mailed to all participants as PDF file attachments.

Contributors of material to be included in the proceedings are required to assign all copyrights or rights to publish. The authors should make sure that the files do not include copyrighted fonts or other impediments for reproduction.

The abstract shall be prepared according to the following instructions:

1) Page size: A4 (21 cm by 29.7 mm) – vertical orientation

2) Margins 25mm all around

3) Layout:

- Title: single-spaced, 14-point size, Times New Roman Font (TNR), bold
- Authors: single-spaced, 12-point size, TNR Font
- Affiliation: single-spaced, 12-point size, TNR Font, italic
- Text: 1.5 spaced, 12-point size, TNR Font
- Length: one page

Important: In case of sending Microsoft Word files, authors should use True Type Embedded Fonts (when saving the file, click Tools, then Options, and tick Embed True Type fonts. This will help to prevent change of fonts when the file is read in a different system).

PRESENTATIONS

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.

PAPERS

A manuscript will be prepared to be included in the meeting proceedings compiled by the IAEA in CD-ROM format (it will be available on the web and will include the presentations of authors submitting a manuscript). Upon acceptance of the abstracts the participants should prepare full size version of the paper which has to be submitted on the first day of the meeting. The guidelines (Author Instructions) for the preparation of the full-size paper will be communicated to the participants with the acceptance of the abstract.

EXPENDITURES AND FINANCIAL SUPPORT

The costs for the organization of the meeting are borne by the IE-JRC-EC and IAEA organisers and the Host organisation (Fusion for Energy). **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.

VISA

Designated participants who require a visa to enter Spain should submit the necessary application to the nearest diplomatic or consular representative of Spain as soon as possible. A letter of invitation, if needed, can be requested from organisers, Ms. Silvia Madrid (Silvia.Madrid@f4e.europa.eu).