



# **Seventh International Workshop on Models and Data for Plasma–Material Interactions in Fusion Devices**

**IAEA Headquarters  
Vienna, Austria**

**26 - 28 May 2025**

**Ref. No.: EVT2303754**

## **Information Sheet**

### **Introduction**

IAEA supports and promotes activities crucial for the global development of fusion power reactors. Understanding the physics of fundamental processes on plasma-wall interactions (PWIs) and plasma-material interactions (PMIs) is a necessity for the R&D of optimised reactor components in the plasma-facing areas as well as structural components. In support of this, IAEA establishes and maintains internationally recommended fusion databases on various PWI and PMI processes relevant for materials used in the reactor components. The International Workshop on Models and Data for Plasma-Material Interactions in Fusion Devices (MoD-PMI) discusses the underlying effects and related data and is organized in cooperation with the IAEA for the seventh time. It brings together researchers and scientists from the areas of fusion energy and materials science to review advances in modelling of processes relevant to PWI and PMI in fusion devices.

The MoD-PMI workshop aims to provide a bridge between fundamental computations and interpretation of experimental data; it will address a variety of processes spanning a wide range of scales including erosion, transport and trapping of fusion fuel species in the wall, changes and evolution in the material microstructure, composition and morphology. The workshop format is to encourage new collaborations on computational and experimental studies of plasma-material interaction in fusion devices.

Participants are invited to propose a presentation of their research, either as an oral contribution or as a poster.

## Objectives

- Knowledge-sharing and networking between fusion researchers and materials scientists in different domains to identify commonalities, foster collaboration and share opportunities.
- Training and instruction of early-stage career researchers in experimental, theoretical and modelling tools used in the research of plasma-wall interaction processes taking place in the plasma-facing and structural components of a fusion reactor.
- Discussion and review of emerging research areas in the materials physics and science specifically related to fusion PMIs.

## Target Audience

Researchers and scientists at all stages from the areas of fusion energy and materials science.

## Working Language(s)

English

## Topics

- Direct use of first-principles approaches (DFT and beyond) as well as classical computational methodologies (Molecular Dynamics, kinetic Monte Carlo, etc).
- Applications of multi-scale methodologies and optimization of parameters used in these methods.
- Machine learning methods for materials data prediction.
- PMI and neutron irradiation effects to material surface composition, morphology and microstructure evolution.
- Experimental PWI and PMI data for modelling: sputtering mechanisms, implantations, spectroscopy, microscopy, etc.
- Experimental approaches and setups for analysis of PMI effects, such as TDS, PAS, and microscopy methods incl. TEM, STM, AFM.

## Participation and Registration

All persons wishing to participate in the event have to be designated by an IAEA Member State or should be members of organizations that have been invited to attend.

In order to be designated by an IAEA Member State or invited organization, participants are requested to submit their application via the InTouch+ platform (<https://intouchplus.iaea.org>) to the competent national authority (Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) or organization for onward transmission to the IAEA by **7 March 2025**, following the registration procedure in InTouch+:

1. Access the InTouch+ platform (<https://intouchplus.iaea.org>):
  - Persons with an existing NUCLEUS account can sign in to the platform with their username and password;
  - Persons without an existing NUCLEUS account can register [here](#).
2. Once signed in, prospective participants can use the InTouch+ platform to:
  - Complete or update their personal details under ‘Complete Profile’ and upload the relevant supporting documents;
  - Search for the relevant event under the ‘My Eligible Events’ tab;
  - Select the Member State or invited organization they want to represent from the drop-down menu entitled ‘Designating Authority’ (if an invited organization is not listed, please contact [InTouchPlus.Contact-Point@iaea.org](mailto:InTouchPlus.Contact-Point@iaea.org));
  - If applicable, indicate whether financial support is requested and complete the relevant information (this is not applicable to participants from invited organizations);
  - Based on the data input, the InTouch+ platform will automatically generate the Participation Form (Form A) and/or the Grant Application Form (Form C);
  - Submit their application.

Once submitted through the InTouch+ platform, the application, together with the auto-generated form(s), will be transmitted automatically to the required authority for approval. If approved, the application, together with the applicable form(s), will automatically be sent to the IAEA through the online platform.

NOTE: The application for financial support should be made, together with the submission of the application, by **7 March 2025**.

For additional information on how to apply for an event, please refer to the [InTouch+ Help](#) page. Any other issues or queries related to InTouch+ can be sent to [InTouchPlus.Contact-Point@iaea.org](mailto:InTouchPlus.Contact-Point@iaea.org).

Selected participants will be informed in due course on the procedures to be followed with regard to administrative and financial matters.

Participants are hereby informed that the personal data they submit will be processed in line with the [Agency’s Personal Data and Privacy Policy](#) and is collected solely for the purpose(s) of reviewing and assessing the application and to complete logistical arrangements where required. The IAEA may also use the contact details of Applicants to inform them of the IAEA’s scientific and technical publications, or the latest employment opportunities and current open vacancies at the IAEA. These secondary purposes are consistent with the IAEA’s mandate. Further information can be found in the [Data Processing Notice](#) concerning the IAEA InTouch+ platform.

## Papers and Presentations

The IAEA encourages participants to give presentations on the work of their respective institutions that falls under the topics listed in above Topics Section.

Participants who wish to give presentations are requested to submit an abstract of their work. The abstract will be reviewed as part of the selection process for presentations. The abstract should be submitted through the event web page in Indico (see Event Web Page details below), and it should extend to no more than 1 page (excluding figures and tables) Abstracts should be submitted not later than **7 March 2025**. Authors will be notified of the acceptance of their proposed presentations by **14 March 2025**.

## Expenditures and Grants

No registration fee is charged to participants.

The IAEA is generally not in a position to bear the travel and other costs of participants in the event. The IAEA has, however, limited funds at its disposal to help meet the cost of attendance of certain participants. Upon specific request, such assistance may be offered to normally one participant per country, provided that, in the IAEA's view, the participant will make an important contribution to the event.

The application for financial support should be made, together with the submission of the application and the presentation abstract, by **7 March 2025**.

## Venue

The event will be held at the Vienna International Centre (VIC) where the IAEA's Headquarters are located. Participants must make their own travel and accommodation arrangements.

General information on the VIC and other practical details, such as a list of hotels offering a reduced rate for IAEA participants, are listed on the following IAEA web page:

<https://www.iaea.org/events>.

Participants are advised to arrive at Checkpoint 1/Gate 1 of the VIC one hour before the start of the event on the first day in order to allow for timely registration. Participants will need to present an official photo identification document in order to be admitted to the VIC premises.

## Visas

Participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria at least four weeks before they travel to Austria. Since Austria is a Schengen State, persons requiring a visa will have to apply for a Schengen visa. In States

where Austria has no diplomatic mission, visas can be obtained from the consular authority of a Schengen Partner State representing Austria in the country in question.

## **Organization**

### **Scientific Secretary**

#### **Mr Kalle Heinola**

Division of Physical and Chemical Sciences  
Department of Nuclear Sciences and Applications  
International Atomic Energy Agency  
Vienna International Centre  
PO Box 100  
1400 VIENNA  
AUSTRIA

Tel.: +43 1 2600 21729

Fax: +43 1 26007

Email: [K.Heinola@iaea.org](mailto:K.Heinola@iaea.org)

### **Administrative Secretary**

#### **Ms Szende Elias**

Division of Physical and Chemical Sciences  
Department of Nuclear Sciences and Applications  
International Atomic Energy Agency  
Vienna International Centre  
PO Box 100  
1400 VIENNA  
AUSTRIA

Tel.: +43 1 2600 21716

Fax: +43 1 26007

Email: [S.Elias@iaea.org](mailto:S.Elias@iaea.org)

Subsequent correspondence on scientific matters should be sent to the Scientific Secretary/Secretaries and correspondence on other matters related to the event to the Administrative Secretary.

## Event Web Page

Please visit the following IAEA web pages regularly for new information regarding this event:

<https://conferences.iaea.org/e/MoD-PMI2025> (meeting administration incl. registrations)

<https://amdis.iaea.org/meetings/mod-pmi-2025/>