



Decennial IAEA Technical Meeting on Atomic, Molecular and Plasma–Material Interaction Data for Fusion Science and Technology

**Hosted by the
Government of Finland**

**through the
University of Helsinki**

Helsinki, Finland

15 - 19 July 2024

Ref. No.: EVT2303646

Information Sheet

Introduction

For over 50 years IAEA's Atomic and Molecular Data (AMD) Unit has facilitated collaborative international research for the production, evaluation and recommendation of data for global fusion R&D. The AMD Unit maintains both numerical and bibliographical databases for fusion and has organized several international coordinated research programmes, meetings, workshops and schools to review atomic and molecular (AM) and plasma-surface interaction (PSI) as well as plasma-material interaction (PMI) research for fusion.

The Decennial IAEA Technical Meeting series on Atomic, Molecular and Plasma-Material Interaction (AMPMI) Data for Fusion Science and Technology data has an overarching feature to collect both data users and producers on AM and PSI/PMI communities and to review the recent activities and to recommend new ones. The previously organized Decennial Technical Meetings:

- 1976, Culham Laboratory (UK): formulated, for the first time, a comprehensive scope for AM data needs for fusion
- 1980, Fontenay-aux-Roses (France): reviewed the status of data needs in relation to experimental programmes of large tokamaks
- 1992, Cadarache (France): reviewed and identified new data needs for large operating fusion

machines

- 2002, Jülich Research Centre (Germany): reconsidered data needs in the light of further increases in the size and power of experimental fusion devices and the early use of deuterium-tritium fuel in these machines
- 2014, Korea Institute of Fusion Energy (form. National Fusion Research Institute; Korea): meeting goal was to advance data-oriented research on AM and PMI processes and properties important for fusion as well as to promote collaboration among fusion experimentalists and those in the field of the calculation or measurement of relevant fundamental data.

The 2024 Decennial meeting will continue to act as a forum between the fusion data users and the data providers with an aim to advance the fruitful communication between these two communities for finding gaps and needs in fusion data.

As the private fusion companies and enterprises have entered the fusion sector in the recent few years, the Decennial meeting welcomes participation of the private fusion sector and promotes for further private-public partnerships in fusion knowledge exchange.

University of Helsinki, Finland, will host the 2024 Decennial meeting. The event focuses to current data activities on atomic and molecular processes relevant for fusion plasmas as well as on plasma-surface and plasma-material processes with fusion materials. The meeting fosters global collaboration for fusion R&D in the public and private sectors as well as identifies priorities for fusion data activities and recommends future focus points for the IAEA Atomic and Molecular Data Unit.

Objectives

- Knowledge-sharing and networking between fusion researchers and plasma scientists in different domains to identify commonalities, foster collaboration and share opportunities.
- The event acts as a forum between fusion data users and data providers with an aim to advance communication between these two communities for finding gaps and fusion data needs.
- Incorporating the private fusion sector in discussions on fusion data requirements and collaborations.
- Increase understanding in experimental and theoretical tools used in research of plasma-particle processes taking place in the core and edge regions of the plasma as well as in plasma-wall interactions of a fusion reactor.
- Discussion and review of emerging research areas in fusion physics and science specifically related to atomic and molecular plasma processes and plasma-wall interaction processes incorporating all the current and future first wall material candidates.
- Proceedings of the meeting to be made available in a suitable IAEA or journal publication.

Target Audience

Research scientists related nuclear fusion, at any stage of their career, who are involved in the quantitative and qualitative study, measurement, analysis, modelling, simulation or prediction of

processes in fusion plasmas or plasma-wall interactions in fusion devices, using or producing fundamental data on these processes. Experimental and theoretical approaches are welcomed.

The IAEA is committed to the promotion of gender equality in all its activities and qualified women scientists are particularly encouraged to participate in the meeting.

Working Language(s)

English

Topics

Main topics of the event

- Recommend fusion data for various plasma-particle processes and plasma-material interactions
- Experiments and data collection with fusion and linear plasma devices
- Validation of plasma-particle processes data with collisional-radiative models
- Fundamental calculations of plasma-particle collisions
- Plasma-surface process properties, trends and underlying effects
- Fast ion and neutron irradiation-induced damage creation, evolution and dynamics
- Fuel retention and release as well as diffusion and transport properties in fusion materials
- Data needs for ITER, DEMO and private sector.

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 **6 May 2024**, 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);
- 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 **6 May 2024**.

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.

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 in A4 page format, should extend to no more than one page (excluding figures and tables). It should be sent electronically through the event web page (see link under ‘Event web page’ section) or directly to Mr Kalle Heinola, the Scientific Secretary of the event (see contact details in below Visas Section), not later than **6 May 2024**.

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, by **6 May 2024**.

Venue

Metsätalo (The Forest House)
University of Helsinki
Unioninkatu 40
00170 Helsinki
Finland

Visas

Participants who require a visa to enter Finland should submit the necessary application as soon as possible to the nearest diplomatic or consular representative of Finland.

Organization

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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 page regularly for new information regarding this event:

<https://conferences.iaea.org/e/AMPMI24>