IAEA
International Atomic Energy Agency
Atoms for Peace and Development

Annual Training Workshop on the Safe Operation and Applications of Neutron Generators

Seibersdorf, Austria

28 September - 9 October 2026

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Information Sheet

Introduction

The use of various neutron sources, either accelerator- or research reactor-based, enhance innovation and socioeconomic development in a variety of fields such as health, materials research, agriculture, cultural heritage, environment, safety and security and many others. Compact neutron generators are electrically controlled neutron sources of low-medium intensity that are an attractive alternative to low power research reactors or isotopic neutron sources (e.g. Cf-252, Am/Be, Pu/Be) which are not free from security risks and radioactive waste management issues. Having been used for decades in oil and mining industries, for exploration and on-line analysis, neutron generator applications have expanded. These include neutron radiography, complementary to X-ray radiography; neutron activation analysis, a highly sensitive analytical technique; radiotracer production for industrial applications; as well as investigations related to security and safeguard applications. Due to their capabilities and transportability, which allows on-field utilization, neutron generators play a major role in solving problems of modern society related to the control of industrial processes, the monitoring of environmental pollution, climate change, water and air quality, to forensics, cultural heritage, agriculture, security and safeguard. In this context, applications of neutrons are one of the thematic areas, where the IAEA supports its Member States in strengthening their capabilities to adopt and benefit from use of diverse neutron sources. The IAEA Nuclear Science and Instrumentation Laboratory (NSIL) has established the Nuclear Science Facility (NSF) based on one Deuterium-Deuterium and one Deuterium-Tritium sealed tube neutron generators, providing neutrons in the energy range of fission (2.5 MeV) and fusion (14 MeV) reactors at intensities of 5x106 to 5x108 n/s over 4π. Based on the experiences from the previous trainings, NSF is further developing training capabilities.

Objectives

The purpose of the event is to train the participants in the safe operation and use of neutron generators, including demonstration of their applications and related modelling tools, through lectures and practical

hands-on exercises. Specifically, the training workshop will include the following topics:

- Neutron production using neutron generators
- Neutron detection principles
- Neutron spectrometry
- Neutron radiography
- Introduction to neutron activation analysis (NAA)
- Introduction to delayed neutron counting (DNC)
- Safety and radiation protection considerations operating neutron generators

Target Audience

This training workshop is intended for newcomers to the field of operating and using neutron sources of low-medium intensity, either already established at their organizations or in the planning stages. Representatives of regulatory bodies or radiation protection agencies, involved in oversight and regulation of similar facilities, might also find this event beneficial.

Working Language(s)

English

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 **14 June 2026**, 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 a paper is being submitted and complete the relevant information;
- 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 **14 June 2026**.

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 IAEA InTouch+ platform.

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 submissions of the application, by **14 June 2026**.

Visas

Participants who require a visa to enter Austria should submit the necessary application as soon as possible 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.

Additional Requirements

Applicants are requested to send a short CV with a brief justification statement why this training would be beneficial for their organization and their professional development.

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.