



IAEA

International Atomic Energy Agency

Atoms for Peace and Development

Training Workshop on Advanced X-ray Techniques for Characterization of Valuable Samples and Objects

Virtual Event

6–10 September 2021

Ref. No.: EVT1905398

Information Sheet

Introduction

Over the last 20 years, the International Atomic Energy Agency's Nuclear Science and Instrumentation Laboratory (NSIL) has played a leading role worldwide in the effective use of nuclear instrumentation and nuclear spectrometry techniques, including the development of X-ray fluorescence techniques and portable systems and analytical methodologies for in situ radiological and materials characterization in Member States priority areas, such as on-site environmental assessment, mineral prospecting and the study of cultural heritage objects.

The NSIL also has access for IBA measurements at the Ruđer Bošković Institute (Zagreb, Croatia) and to end-stations at the Elettra Synchrotron beamlines (Trieste, Italy). The access of IAEA Member States' investigators to such facilities for experimental work and adaptive research is promoted and facilitated through different mechanisms.

In addition to these research activities, the NSIL has supported IAEA technical cooperation projects by providing training in nuclear instrumentation to hundreds of fellows and scientific visitors. The NSIL has extensive experience in providing training and recommendations for implementing nuclear spectrometry techniques.

Objectives

The objective of the workshop is to develop capabilities and skills of Member States to develop, maintain and operate advanced X-ray spectrometry instruments; to share knowledge on different X-ray based techniques for both bulk and spatially resolved measurements of unique and valuable objects; to nurture and further develop the community and network of scientists and technicians utilizing these techniques; and to strengthen the interactions of these providers of specialized services with stakeholders that can benefit from the application of these techniques. The following topics are expected to be included in the programme:

- i. Techniques for spatially resolved elemental analysis: SEM-EDS, Micro and Confocal XRF, Full Field XRF and micro-PIXE.
- ii. Synchrotron-based techniques for elemental analysis and speciation studies.
- iii. Addressing current needs of IAEA Member States for introducing and extending the use of x-ray techniques in support of advanced characterization of special materials, including cultural heritage objects,
- iv. Role of the IAEA in supporting the activities undertaken by developing Member States to achieve effective introduction of x-ray techniques.

Workshop format

The Workshop will be organised in virtual mode using as platform Microsoft Teams Meetings and will include lectures and video recorded practical demonstrations using the instrumentation available at NSIL and its collaborating centres. Lectures will be provided by selected experts and followed by the video recorded demonstrations.

Participants will be muted and not allowed to share their cameras as to keep the data traffic as low as possible, and to accommodate to the possible restrictions in bandwidth access of some countries. Only the contributors will be given role of presenter at their allocated time. Attendants will be able to post questions using the chat. At the end of each sessions, the questions will be asked to each of the presenters by the moderator.

The official language of the workshop is English. No interpretation will be provided. It is expected that the workshop will start at 14:00 (CET) on Monday, 6 September 2021 and conclude by 17:30 on Friday, 10 September 2021.

Target Audience

The workshop may be attended only upon official nomination. Participants should complete the attached Participation Form (Form A) and send it to the appropriate national authority (Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) for subsequent transmission to the IAEA, not later than 23 July 2021. Nominations received after that date or applications sent directly by individuals or by private institutions cannot be considered. Nominating Governments will be informed in due course of the names of the selected candidates and at that time full details will be given on the procedures to be followed with regard to administrative and financial matters.

The workshop will be of interest to professionals involved in the field of x-ray spectrometry techniques for characterization of special objects, or who have been designated by their national authorities to provide an assessment of their country's needs in these fields. Professionals of organizations that can benefit from the application of these techniques, such as museum curators, archaeologists or analysts from criminal forensic laboratories are also welcomed.

Abstract submission:

The Workshop aims at training of participants, so no contribution nor papers are required from participants. However, to optimize the evaluation of applications, participants are invited to submit a short abstract describing: the nature of their work, their motivation to attend the workshop, the future activities planned in their home institution based on the workshop techniques.

The abstract must be sent, together with Form A, to the appropriate national authority, and also directly to the IAEA Scientific Secretary (R.Padilla-Alvarez@iaea.org), by **23 July 2021**.

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, participants are requested to send the **Participation Form (Form A)** to their competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) for onward transmission to the IAEA by **23 July 2021**. Participants who are members of an organization invited to attend are requested to send the Participation Form (Form A) through their organization to the IAEA by above deadline.

Selected participants will be informed in due course on the procedures to be followed with regard to administrative and technical 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. Further information can be found in the [Data Processing Notice](#) concerning IAEA InTouch+ platform.

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretary 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:

www.iaea.org/events/EVT1905398