



**IAEA**

International Atomic Energy Agency

*Atoms for Peace and Development*

# **Training Workshop on Advances in Ion Beam Techniques and their Applications**

**Hosted by the  
Government of Croatia**

**through the  
Laboratory for ion beam interactions, Ruđer Bošković Institute**

**Zagreb, Croatia**

**30 November–4 December 2020**

**Ref. No.: EVT1905178**

## **Information Sheet**

### **Introduction**

Accelerator based technologies are associated with a broad range of applications having societal and technological impact and can contribute to the economic development of Member States. The utilization of accelerators enhances innovation in a variety of fields such as health, materials research, cultural heritage, environment, energy and natural resources being typical examples. In this context, accelerator applications are one of the thematic areas, where the IAEA supports its Member States in strengthening their capabilities to adopt and benefit from the usage of accelerators.

In response to the training needs of young scientists from developing Member States in utilization of accelerators, the Physics Section organizes a series of training workshops at the accelerator facilities of the Ruđer Bošković Institute (RBI), Zagreb, Croatia. These include training in Ion Beam Analysis (IBA) techniques biannually. IBA techniques is a group of non-destructive nuclear analytical methods applied with low energy electrostatic accelerators. They provide important, often unique, information on the elemental and isotopic composition, layer structure, electronic and many other properties of materials in solid or liquid form, with high precision. As such, they are extensively used in materials analysis, environmental monitoring, cultural heritage studies and other investigations of problems of key societal impact and industrial interest.

## Objectives

The objective of the forthcoming training workshop is to deepen knowledge and skills in the following scheduled basic IBA techniques:

- Proton-Induced X-ray Emission (PIXE)
- Proton-Induced Gamma-ray Emission (PIGE)
- Rutherford Backscattering Spectroscopy (RBS)
- Elastic Recoil Detection Analysis (ERDA)
- Inelastic Nuclear Reaction Analysis (NRA)
- Single ion techniques: Ion Beam Induced Charge (IBIC) and Scanning Transmission Ion Microscopy (STIM)

## Target Audience

This Training workshop, intended for young scientists working or planning to work for their thesis at accelerator facilities, will widen their specific knowledges and skills in the standard IBA techniques through lectures, hands on-hands work on the specific problems and demonstration experiments.

## 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 **4 September 2020**. 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 financial matters.

Please note that the IAEA is in a transition phase to manage the entire registration process for all regular programme events electronically through the new InTouch+ (<https://intouchplus.iaea.org>) facility, which is the improved and expanded successor to the InTouch platform that has been used in recent years for the IAEA's technical cooperation events. Through InTouch+, prospective participants will be able to apply for events and submit all required documents online. National authorities will be able to use InTouch+ to review and approve these applications. Interested parties that would like to use this new facility should write to: [InTouchPlus.Contact-Point@iaea.org](mailto:InTouchPlus.Contact-Point@iaea.org).

## 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 using the **Grant Application Form (Form C)** which has to be stamped, signed and submitted by the competent national authority to the IAEA together with the **Participation Form (Form A)** by **4 September 2020**.

## **Visas**

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

## **Organization**

### **Scientific Secretary**

#### **Mr Sotirios Charisopoulos**

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#### **Mr Natko Skukan**

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## **Administrative Secretary**

**Ms Mariam Yaney**

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

# Participation Form

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**Zagreb, Croatia**

**30 November–4 December 2020**

To be completed by the participant and sent to the competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA, or National Atomic Energy Authority) of his/her country for subsequent transmission to the International Atomic Energy Agency (IAEA) either by email to: [Official.Mail@iaea.org](mailto:Official.Mail@iaea.org) or by fax to: +43 1 26007 (no hard copies needed). Please also send a copy by email to the Scientific Secretary [S.Charisopoulos@iaea.org](mailto:S.Charisopoulos@iaea.org) and to the Administrative Secretary [M.Yaney@iaea.org](mailto:M.Yaney@iaea.org).

Participants who are members of an invited organization can submit this form to their organization for subsequent transmission to the IAEA.

**Deadline for receipt by IAEA through official channels: 4 September 2020**

Family name(s): (same as in passport)	First name(s): (same as in passport)	Mr/Ms
Institution:		
Full address:		
Tel. (Fax):		
Email:		
Nationality:	Representing following Member State/non-Member State/entity or invited organization:	
If/as applicable:		
Do you intend to submit a paper?	Yes	No
Would you prefer to present your paper as a poster?	Yes	No
Title:		





# Form for Submission of a Paper

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Title of the paper:		
If applicable: Abstract ID in IAEA-INDICO:		
Family name(s) and first name(s) of all author(s): e.g. Smith, John	Scientific establishment(s) in which the work has been carried out	City/Country
1.		
2.		
3.		
Family name and first name(s) of author presenting the paper: e.g. Smith, John	Mr/Ms:	
Mailing address:		
Tel. (Fax):		
Email:		

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**Date:**

**Signature of main author:**



# Grant Application Form

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Family name(s): (same as in passport)	First name(s): (same as in passport)	Mr/Ms:
Mailing address:	Tel.:	
	Fax:	
	Email:	
Date of birth (yyyy/mm/dd):	Nationality:	

### 1. Education (post-secondary):

Name and place of institution	Field of study	Diploma or Degree	Years attended from            to	

### 2. Recent employment record (starting with your present post):

Name and place of employer/ organization	Title of your position	Type of work	Years worked from            to	

### 3. Description of work performed over the last three years:

### 4. Institute's/Member State's programme in field of event:

**Date:** \_\_\_\_\_ **Signature of applicant:** \_\_\_\_\_

**Date:** \_\_\_\_\_ **Name, signature and stamp of Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority**

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