



The Abdus Salam
**International Centre
for Theoretical Physics**



Joint ICTP-IAEA Advanced Workshop on Single Ion Technologies for Bio-medical and Materials Sciences

Description:

The demand for Accelerator-based MeV single ion techniques is rapidly growing for applications in biomedicine, materials and semiconductor science, and quantum technologies.

Next generation applications and technologies will require unprecedented control over the ion species, energy and spatial precision with which these ions are delivered. This workshop will address the current research trends in the field including an overview of state-of-the-art facilities and the techniques employed for radiobiology, materials modification and quantum technologies. Methods for imaging and irradiating materials with single ions will be discussed along with the technologies that have been developed to enable these techniques.

TOPICS:

- Introduction to single ion technology and applications
- High resolution imaging techniques using single ions
- Accelerator technology for generating single ions, beam focusing and scanning systems
- Single ions in radiobiology and DNA damage and repair
- Quantum applications of single ions
- Studies of radiation hardness and devices for harsh radiation conditions

The workshop is organized together with the IAEA-National University of Singapore Collaborating Centre.

This workshop is open for MSc and PhD students and early career researchers (up to 7 years after PhD).

Call for Abstracts: All applicants are required to submit an abstract for a poster presentation.

Useful resources:

[IAEA e-learning course on Quantum Science and Technologies](#)
[IAEA publication on Guidelines for the Determination of Standardized Semiconductor Radiation Hardness Parameters](#)

SPEAKERS:

P. Barberet, University of Bordeaux, France
T. Kokalova-Wheldon, IAEA Austria
T. Konishi, National Institutes for Quantum Science and Technology, Japan
J. Meijer, Leipzig University, Germany
P. Olivero, University of Turin, Italy
E. Vittone, University of Turin, Italy



30 June - 4 July 2025



Trieste, Italy



**Deadline:
15 March 2025**

DIRECTORS:

A. Simon, IAEA, Austria
A. A. Bettiol, National University of Singapore

LOCAL ORGANIZER:

R. Kaiser, ICTP, Italy

FURTHER INFORMATION:

E-mail: smr4082@ictp.it

Web: <https://indico.ictp.it/event/10847/>

Female scientists are encouraged to apply.



GRANTS:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries. There is no registration fee.



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