

# **Third International Conference on Applications of Radiation Science and Technology (ICARST-2025)**

**Monday, 7 April 2025 - Friday, 11 April 2025**

**IAEA Headquarters**

## **Scientific Programme**

## THEMES AND TOPICS

The scope of the conference is aimed to cover, but is not limited to, the following topical areas:

- Advances in radiation chemistry, radiation science and technology;
- Radiation modified advanced materials: from fundamentals to applications;
- Radiation and nuclear technology for imaging and preservation of cultural heritage;
- Radiation processing applications in medical sterilization, tissue banking, food and agriculture;
- Dosimetry, standards and quality management of irradiation facilities;
- New generation of radiation sources: gamma rays, electron beam and X-ray;
- Production and application of radionuclides and tracers for studying industrial and environmental processes and flow visualisation;
- Nucleonic control and measurement systems and imaging technologies;
- NDT applications for civil engineering, including artificial intelligence, neutron and muon radiography;
- Computational fluid dynamic (CFD) and numerical Residence Time Distribution (RTD) modelling;
- Radiation sciences and technology in environmental monitoring, protection, remediation and post natural disaster management;
- Education, training and certification in radiation science and technology; and
- Radiation sciences & technology success stories in line with the UN SDGs (<https://www.undp.org/content/undp/en/home/sustainable-development-goals.html>).

Abstracts concerning medical applications of radioisotopes and radiopharmaceuticals are considered out-of-scope for the ICARST-2025. However, as a complimentary to the ICARST series, the IAEA will host the ISTR-2027 Conference specifically covering medical applications of radiation science and technology. Submissions of abstracts focused on these topics related to ISTR-2027 are highly encouraged.

## TARGET AUDIENCE

This conference will focus on the applications of radiation science and technology, which is a multidisciplinary area covering many branches including radiation-related physics, chemistry, materials science, biology, engineering, and industrial applications. The target audience for this conference comprises of, but is not limited to:

- Radiation technologists in areas of chemistry, physics, microbiology, material scientists;
- Food technologists;
- Cultural heritage conservators and preservers;
- High dose radiation dosimetry experts;
- Environment engineers and scientists;
- Radiation facility operators;
- Quality assurance specialists for radiation facilities;
- Radiation safety experts;
- Process engineers;
- Entrepreneurs involved in applications of radiation technologies;
- Manufacturers of radiation sources and equipment suppliers;
- Research scientists and students engaged in radiation technologies;
- Policy makers and regulators; and
- Other stakeholders.

## **Track 1: Advanced radiation chemistry and trends in radiation science and technology**

**Track 2: Emerging roles of radiation sciences and technology in environmental monitoring and protection**

**Track 3: Dosimetry, standards and quality management of irradiation facilities**

**Track 4: Advanced materials: from fundamentals to applications**

**Track 5: New generation of radiation sources: gamma ray, electron beam, and X-ray**

**Track 6: Alternative radiation sources based on accelerator technologies**

**Track 7: Radiation sterilization and microbiological qualification**

**Track 8: Radiation & nuclear technologies for characterization, imaging, and preservation of cultural heritage**

**Track 9: Tracers and radiotracers applications for studying industrial and environmental processes**

**and flow visualisation**

**Track 10: Sealed sources nucleonic control and measurement systems and imaging technologies**

**Track 11: Computational fluid dynamic (CFD) and numerical Residence Time Distribution (RTD) modelling**

**Track 12: Recent radiation processing applications in food and agriculture**

**Track 13: Radiation technologies in tissue banking and tissue engineering**

**Track 14: Education and training in radiation science and technology**

**Track 15: Artificial Intelligence (AI) applied in radiation technologies**

**Track 16: Radiation sciences & technology success stories in support of attaining UN-SDGs**