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 preservators;
- 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