



Second International Conference on Applications of Radiation Science and Technology (ICARST-2021)

**IAEA Headquarters
Vienna, Austria**

19–23 April 2021

**Organized by the
International Atomic Energy Agency (IAEA)**

**In cooperation with the
International Society for Tracer and Radiation Applications**

Announcement and Call for Papers

A. Background

The International Atomic Energy Agency (IAEA) is organizing the Second International Conference on Applications of Radiation Science and Technology (ICARST-2021), following the success of the first ICARST in 2017 (ICARST-2017). Since the discovery of X-rays and radioactivity more than 100 years ago, different ways to artificially produce radiation and radioactive materials were found. The studies of ionizing radiation and radioactive materials has led to dramatic advances in radiation science and technology, and they are used for a wide range of procedures in industry, agriculture, and research. Radiation technologies have been promoted for their merit in addressing important human needs, such as improving industrial production and processes; better managing scarce freshwater resources; improving human health and food safety; preserving cultural heritages; and protecting our environment.

Numerous innovations and accomplishments in the field of radiation sciences have been already acknowledged, however it is now time to take a comprehensive look at their status in academia and industry, as well as their ability to meet future challenges. Radiation scientists are currently addressing issues related to producing advanced high performance materials through ‘green’ industrial processes to ensure cleaner environment; attaining a thorough understanding of the chemical effects of radiation under special conditions (which is important for material science in nuclear energy field, for studies of stability and compatibility of irradiated products in the human body, and for other applications); and investigating novel approaches to address the complicated chemistry at interfaces. Radiation technologists, on the other hand, are faced with other challenges, such as ensuring the safe and reliable operation of radiation facilities, implementing requisite international standards for process control, ensuring the continued supply and transport of cobalt-60 consignments across continents, and developing a new generation of high power electron beam accelerators and X-ray sources for emerging applications. Additionally, an innovative approach for new generation of low energy electron beam for in-line applications is being proposed and investigated, challenging the dosimetrists and microbiologists to reach better methodologies. Besides radiation processing applications, there are other radiation technologies, such as the use of radiotracers to improve and optimize the performance of industrial techniques to study environmental processes, and to control the quality of products. The International Atomic Energy Agency (IAEA), working in close partnership with its Member States as well as with professional scientific bodies and the industry, has striven to maximize the contribution of radiation sciences and technologies towards the achievement of the Member States’ development priorities in a safe manner.

B. Objectives

The second IAEA International Conference on Applications of Radiation Science and Technology (ICARST-2021) will provide a unique opportunity to achieve the following specific objectives:

- To review:
 - key developments in the applications of radiation science and technology as well as the ‘state of the science’ in this field;

- national, regional and global initiatives for implementing proven industrial applications that lead to socio-economic benefits and strengthen capacity building in Member States; and
- To serve as a composite platform through which industry and academia can foster new initiatives for ensuring the success of radiation technologies in meeting the emerging challenges in various areas.

C. Format and Topics

A series of plenary sessions will address the topics listed below, and the conference programme will include invited keynote speakers from academia and industry, giving oral presentations and participating in panel discussions. In addition, poster sessions will be organized to allow ample time for discussion and interaction among participants. Finally, a closing round table session will review the main conclusions drawn in the plenary sessions and will summarize recommendations for the future development of radiation sciences and technologies.

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

- Advanced radiation chemistry and trends in radiation science and technology
- Emerging roles of radiation sciences and technology in environmental monitoring and protection
- Dosimetry, standards and quality management of irradiation facilities.
- Advanced materials: from fundamentals to applications
- New generation of radiation sources: gamma ray, electron beam, and X-ray
- Alternative radiation sources based on accelerator technologies
- Radiation sterilization and the microbiological qualification
- Radiation & nuclear technology for characterization, imaging, and preservation of cultural heritage
- Tracers and radiotracers applications for studying industrial and environmental processes, and flow visualisation
- Sealed sources nucleonic control and measurement systems and imaging technologies
- Computational fluid dynamic (CFD) and numerical Residence Time Distribution (RTD) modelling
- Recent radiation processing applications in food and agriculture
- Radiation technologies in tissue banking and tissue engineering
- Education and training in radiation science and technology
- Radiation sciences & technology success stories in support of attaining UN-SDGs (<https://www.undp.org/content/undp/en/home/sustainable-development-goals.html>)

D. Target Audience

This conference will focus on 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. Accordingly, the target audience for this conference comprises, but is not limited to:

- Radiation technologists
- Entrepreneurs or stakeholders involved in applications of radiation technologies
- Research scientists engaged in nuclear and radiation research
- Policy makers and regulators

E. Expected Outcomes

The conference will strengthen contacts and foster cooperation among radiation science researchers, radiation technology providers, radiation facility operators and the coordinators of academic programmes in the radiation sciences, leading to a comprehensive review of the status of radiation sciences in industry and academia. The conference is expected to generate ideas that will form the basis of future IAEA programmes in the area of radiation technologies

F. Abstracts, Poster Presentations and Proceedings

All presentations — other than invited keynote talks — must present original work and must not have been published elsewhere.

Persons who wish to present at the conference must submit an abstract on one of the topics listed under Section C. The abstract should give enough information on the contents of the proposed presentation to enable the Programme Committee to evaluate it. Introductory and general matters should not be included. The accepted abstracts will be reproduced in unedited form in the electronic Compilation of Abstracts which will be distributed to all participants at the conference.

F.1 Submission of Abstracts

Anyone wishing to present at the conference must submit an abstract **in electronic format** (no paper copies) directly to the IAEA. Instructions on how to upload the abstracts to the conference's web browser-based file submission system (IAEA-INDICO) will be available on the conference web page (see Section P). The

abstracts **must** be submitted through this system by **16 October 2020**. No other form of submission will be accepted.

The submission should indicate to which of the topics outlined in Section C above it relates and the abstract content should be sequenced accordingly:

- Background of the study;
- Methodology;
- Results; and
- Conclusion.

The abstract:

- should be a maximum of 500 words (including title);
- should not include more than one figure, graph or table;
- should not include references; and
- must be written and submitted using the abstract template on the conference web page (see Section P).

In addition, authors must submit the following two forms to their appropriate governmental authority (see Section G) for transmission to the IAEA. These forms must be received by the IAEA no later than **16 October 2020**:

- Participation Form (Form A); and
- Form for Submission of a Presentation (Form B).

IMPORTANT: The electronically received abstracts will be considered by the Programme Committee only if these two forms have been received by the IAEA through the established official channels (see Section G).

Authors should state to which of the topics outlined in Section C their contribution relates.

F.2 Acceptance of Abstracts for Presentations

The Secretariat reserves the right to exclude presentations that do not comply with its quality standards and do not apply to one of the topics in Section C above.

Authors will be informed **by 30 November 2020** if their abstracts have been accepted for poster or oral presentation. The abstracts, if accepted by the Programme Committee, will also be reproduced unedited in the electronic Compilation of Abstracts which will be distributed to all participants at the conference.

F.3 Proceedings

The proceedings of the conference will be published by the IAEA as soon as possible after the conference. The proceedings will be made free to read online and print copies can be ordered, at a special discounted price.

G. Participation and Registration

All persons wishing to participate in the conference must be designated by an IAEA Member State or should be members of organizations that have been invited to attend. The list of invited organizations can be requested from the Conference Secretariat (see Section O).

In order to be designated by an IAEA Member State, participants are requested to send the following form(s), as applicable, to their competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority):

- Participation Form (Form A): participation only; no deadline if only Form A is submitted.
- Form for Submission of an Abstract (Form B): participants submitting an abstract through INDICO must send the completed and signed Form B together with Form A to their competent national authority for onward transmission to the IAEA (icarst2021@iaea.org) by **16 October 2020**.
- Grant Application Form (Form C): participants requesting financial support from the IAEA, must complete Form C and send it together with Form A (and Form B, if applicable) to the competent national authority for onward transmission to the IAEA (icarst2021@iaea.org) by **16 October 2020**. Form C must be stamped and signed by the competent national authority.

Participants who are members of an organization invited to attend are requested to send the above form(s) through their organization to the IAEA (icarst2021@iaea.org).

In addition, participants are requested to pre-register online through the IAEA web page for the conference.

H. 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 conference. The IAEA has, however, limited funds at its disposal to help cover 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 conference.

If Governments wish to apply for a grant on behalf of one of their participants, the Participation Form (Form A) and the Grant Application Form (Form C), stamped and signed by the Government, must reach the IAEA (icarst2021@iaea.org) by 16 October **2020**.

Applications that do not comply with the above conditions cannot be considered.

Approved grants will be issued in the form of a lump sum payment that usually **covers only part of the cost of attendance**.

I. Distribution of Documents

A preliminary programme will be posted on the IAEA conference web page as soon as possible. The final programme and the electronic Compilation of Abstracts will be available free of charge upon registration at the conference.

J. Exhibitions

A limited amount of space will be available for commercial vendors' displays/exhibits during the conference. Interested parties should contact the Scientific Secretariat by email: icarst2021@iaea.org by **30 November 2020**.

K. Working Language

The working language of the conference will be English. All communications and papers must be sent to the IAEA in English.

L. Conference Venue and Accommodation

The conference will be held at the IAEA's Headquarters in Vienna, Austria. Participants must make their own travel and accommodation arrangements. Hotels which are offering a reduced rate for conference participants are listed on <https://www.iaea.org/events>. Please note that the IAEA is not in a position to assist participants with hotel bookings, nor can the IAEA assume responsibility for paying cancellation fees or for re-booking and no shows.

M. Visas

Participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria as early as 3 months but not later than four weeks before their travel. Since Austria is a Schengen State, persons requiring a visa will have to apply for a Schengen visa. In States where Austria has no diplomatic mission, visas can be obtained from the consular authority of a Schengen Partner State representing Austria in the country in question.

For more information, please see the Austria Visa Information on <https://www.iaea.org/events>.

N. Key Deadlines

Submission of abstract through IAEA-INDICO	16 October 2020
Submission of Form B (together with Form A) through official channels	16 October 2020
Submission of Form C (together with Form A) through official channels	16 October 2020
Notification of acceptance of abstracts	30 November 2020
Submission of Form A only (no paper submission, no grant request)	No deadline

O. Conference Secretariat

General contact details of the Conference Secretariat:

International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 VIENNA
AUSTRIA
Tel.: +43 1 2600
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Division of Conference and Document Services

Department of Management

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Email: J.Zellinger@iaea.org

Subsequent correspondence on scientific matters should be sent to either of the Scientific Secretaries of the conference and correspondence on administrative matters to the IAEA Conference Services Section.

P. Conference Web Page

Please visit the following web page regularly for new information regarding this conference:

<https://www.iaea.org/events/icarst-2021>