



Virtual Workshop on the Technical-Economic Feasibility Studies to Implement Radiation Technology for the Recycling of Polymer Waste

Hosted by

The International Atomic Energy Agency
IAEA Headquarters
Vienna, Austria

24 August to 16 November 2021

Ref. No.: ME RER1021 - 2102459

Information Sheet

Purpose

The purpose of the event is to provide lectures and discuss specialised topics in radiation technology for the recycling of polymer waste and provide support to the participants on their case studies / pilot projects on the utilization of radiation technology for the recycling of polymer waste, taking into account the technoeconomic aspects throughout the whole plastic value chain.

Working Language(s)

The working language(s) of the event will be English.

Deadline for Nominations

Nominations received after 26 July 2021 will not be considered.

Project Background

The radiation processing is based on the physical and chemical changes introduced by the interactions of ionizing radiation with matters. Ionizing radiation produces ionization and excitation by transferring energy to electrons present in atoms of the stopping material. The use of ionizing radiation for industrial applications, like the sterilization of medical devices or cross-linking of polymers, has a long and successful track record and has proven itself to be a key technology. Emerging fields, including environmental applications, the sterilization of complex products, such as medical and pharmaceutical products, cultural heritage artefacts or advanced material treatment, require the design and control of even more complex irradiators and irradiation processes.

The virtual workshop is organized under the IAEA Technical Cooperation project RAS1024 “Reutilizing and Recycling Polymeric Waste through Radiation Modification for the Production of Industrial Goods”, which aims to strengthen regional capabilities in the application of radiation for developing value added new materials from waste polymers for industrial applications.

As it is virtual, the workshop has been opened to other regional participants who have interests in prioritizing the usage of radiation technologies for recycling of waste materials, reducing pollution and energy consumption. Through the cross-regional cooperation platform, optimum benefits from radiation technologies can be acquired in a cost-effective manner, in relation to the recycling of solid waste.

Scope and Nature

The workshop will include lectures, practical examples and discussion on the following topics:

- Important reactions of polymer modification, evaluation of radiation-induced effects on polymers properties
- Methods for characterization of irradiated polymers. Influence of the type of polymers (single or mixture), influence of chemical environment during and after irradiation, polymer – irradiation – morphology – correlations
- Preparation of raw materials. Sorting of plastic waste
- Radiation processing for polymer modification: Production of composites from plastic waste and thermal radiolysis
- Technologies and equipment for recycling processing
- Economic aspects of radiation processing, improving the existing technologies
- Macroeconomics aspects of introducing radiation into recycling processing. How this impact on the society and environment
- Opportunities, pre-feasibility and feasibility studies and discussion and continual support on participants' individual case studies / pilot projects, which include the followings:
- Discussion and feedback to the participants on their pilot scale plant design for polymer waste recycling using radiation technology
- Support on the developing of the technical- feasibility studies and the impact at the macroeconomic level

Participation

The workshop is open to RER1021 participating member states. Each country is invited to nominate more than one participant that meets the qualifications as described in the Participants' Qualifications below.

Participants' Qualifications and Experience

The participants should be involved in the research and development of the pilot scale plant/prototype for recycling of polymer waste by irradiation. It is encouraged to each country to nominate one participant from the research group and one candidate from the recycling waste programmes. Participation of semi-senior or senior researchers and engineers are highly recommended. Participants should be able to discuss with the experts and defend their technical proposals; to have a consistent understanding of the entire polymer value chain.

Application Procedure

Candidates wishing to apply for this event should follow the steps below:

1. Access the InTouch+ home page (<https://intouchplus.iaea.org>) using the candidate's existing Nucleus username and password. If the candidate is not a registered Nucleus user, she/he must create a Nucleus account (<https://websso.iaea.org/IM/UserRegistrationPage.aspx>) before proceeding with the event application process below.
2. On the InTouch + platform, the candidate must:
 - a. Finalize or update her/his personal details, provide sufficient information to establish the required qualifications regarding education, language skills and work experience ('Profile' tab) and upload relevant supporting documents;
 - b. Search for the relevant technical cooperation event (EVT2102459) under the 'My Eligible Events' tab, answer the mandatory questions and lastly submit the application to the required authority.

NOTE: Completed applications need to be approved by the relevant national authority, i.e. the National Liaison Office, and submitted to the IAEA through the established official channels by the provided designation deadline.

For additional support on how to apply for an event, please refer to the [InTouch+ Help page](#). Any issues or queries related to InTouch+ can be addressed to InTouchPlus.Contact-Point@iaea.org.

Should online application submission not be possible, candidates may download the nomination form for the meeting from the [IAEA website](#).

NOTE: A medical certificate signed by a registered medical practitioner dated not more than four months prior to starting date of the event must be submitted by candidates when applying for a) events with a duration exceeding one month, and/or b) all candidates over the age of 65 regardless of the event duration.

Administrative and Financial Arrangements

Nominating authorities will be informed in due course of the names of the candidates who have been selected, and will at that time be informed of the procedure to be followed with regard to administrative and financial matters.

Selected participants who indicate their need, will receive financial support to contribute to the expenses of their costs for internet connection for the duration of the event in line with IAEA rules and procedures.

Disclaimer of Liability

The organizers of the event do not accept liability for the payment of any cost or compensation that may arise from damage to or loss of personal property, or from illness, injury, disability or death of a participant while he/she is travelling to and from or attending the course, and it is clearly understood that each Government, in approving his/her participation, undertakes responsibility for such coverage. Governments would be well advised to take out insurance against these risks.

IAEA Contacts

Programme Management Officer (responsible for substantive matters):

Ms Tomoko Furusawa
Division for Europe
Department of Technical Cooperation
International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 VIENNA
AUSTRIA
Tel.: +43 1 2600 22992
Fax: +43 1 26007
Email: T.Furusawa@iaea.org

Administrative Contact (responsible for administrative matters):

Ms Zuzana Svakova
Division for Europe
Department of Technical Cooperation
International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 VIENNA
AUSTRIA
Tel.: +43 1 2600 21971
Fax: +43 1 26007
Email: Z.Svakova@iaea.org