IAEA
International Atomic Energy Agency
*Atoms for Peace and Development*

# Regional Training Course on Radiation Technology in Plastic Waste Recycling Application

**Hosted by**

The Government of Greece

**through the**

Aristotle University of Thessaloniki

Thessaloniki, Greece

**7 - 11 September 2026**

**Ref. No.: TN-RER1024-2601763**

**Information Sheet**

## Purpose

The purpose of the event is to train participants on the use of radiation technology for plastic waste recycling, with a focus on process development and adaptation, electron accelerator requirements, and material handling and dosimetry.

# Working Language(s)

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

# Deadline for Nominations

Nominations received after **06 July 2026** will not be considered.

# Project Background

The International Atomic Energy Agency (IAEA) has initiated the NUclear TEChnology for Controlling Plastic Pollution (NUTEC Plastics) Initiative, aims to revolutionize recycling practices through the innovative application of radiation technology. By harnessing radiation technology, especially in recycling post-consumer plastics such as polyethylene, polypropylene, and polytetrafluoroethylene, the initiative aims to address the prevalent issue of downcycling. This transformative approach facilitates the conversion of plastic waste into high-value products, marking a departure from traditional downcycling methods. Furthermore, radiation technology offers a sustainable solution by reducing reliance on harmful additives and solvents, potentially decreasing energy consumption in the recycling process.

The management of solid waste, particularly polymeric materials, presents a significant environmental challenge in the region due to their non-biodegradable nature. Traditional recycling methods often struggle to cope with the complexities inherent in polymer reuse, necessitating innovative approaches for effective waste management. The project strives to establish optimal processes for polymeric material reuse/recycling, aligning with the global imperative to minimize resource depletion and maximize material reuse. By fostering regional cooperation and capacity-building efforts, the initiative aims to equip local stakeholders with the knowledge and skills required to address the environmental impacts of plastic pollution effectively.

At the core of the project's objectives lies the reutilization and recycling of polymeric waste to generate value-added industrial goods, thereby mitigating environmental pollution and fostering sustainable development in the region. By enhancing public perception of radiation processing and its role in environmental conservation, the project seeks to garner widespread support for its endeavours and catalyse positive change on a regional scale.

The IAEA plays a pivotal role in advancing the utilization of radiation processing. The agency facilitates the transfer of radiation processing technologies, encourages the sharing of knowledge and expertise, and fosters the development of a professional network dedicated to environmental protection and the sustainable utilization of resources as well as the quality assurance (QA) of radiation facilities. These endeavours are underpinned by the harmonized and safe implementation of radiation technologies through the RER1024 project.

# Scope and Nature

The training course will include lectures and discussions covering the following topics:

Explore the associated activities related to the conceptual design and planning of the radiation-assisted recycling facility, such as facility concept, process development and dosimetry for the implementation of radiation technology in polymer waste recycling. This is to gain insights into assessing the viability and potential of radiation technology adoption in industrial setup.

Discussion and continual support on participants' individual case studies from Member States. This is to establish the collaborative learning and provide ongoing support for participants' individual case studies and pilot plants' planning.

The course will combine theoretical lectures with group discussion sessions to provide participants with a comprehensive understanding of electron beam technology, including system operation, safety considerations, and field-based applications. The training will also facilitate knowledge exchange among participants and support the effective and safe use of electron beam systems in research, industrial, and environmental applications.

By engaging in these diverse activities, participants will acquire practical knowledge, refine their project approaches, and advance their understanding of implementing radiation technology for polymer waste recycling.

# Participation

The training course is open to RER1024 participating Member States. Each country is invited to nominate up to two participants that meets the qualifications as described in the Participants' Qualifications below.

# Participants' Qualifications and Experience

The participants should be a member of national project team from countries that is participating in the current RER1024 project. The participant should ideally have knowledge and experience in or be currently involved with the use irradiation to recycle polymer waste. Participation of experienced researchers and engineers are highly recommended.

# Expected Outputs

The expected outputs of the training course include among others:

- Participants will acquire and demonstrate practical competency in electron beam systems, including a thorough understanding of technical requirements and operational safety.
- Participants will be able to evaluate the technical viability of integrating radiation technology in the country.
- Participants will gain the skills necessary to develop conceptual facility designs and identify potential opportunities for radiation technology within industrial-scale processing.
- The training course will result in the creation of formalized technical support channels, ensuring

ongoing knowledge exchange and expert assistance to facilitate the successful long-term implementation of national project.

## 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. Download and complete the Designation of Beneficiary and Emergency Contact Form, and upload to InTouch+ ('Profile' tab under the personal section) specifying the document name. If already provided, kindly discard this step; and
    c. Search for the relevant technical cooperation event (**EVT2601763**) 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 training course 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 will receive an allowance from the IAEA sufficient to cover their costs of lodging, daily subsistence and miscellaneous expenses. They will also receive either a round-trip air ticket based on the most direct and economical route between the airport nearest their residence and the airport nearest the duty station through the IAEA's travel agency AX Travel Management, or a travel allowance, or they will be reimbursed travel by car/bus/train in accordance with IAEA rules for non-staff travel.

## 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.

## Note for Female Participants

Any woman engaged by the IAEA for work or training should notify the IAEA on becoming aware that she is pregnant.

The Board of Governors of the IAEA approved new International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources. The Standards deal specifically with the occupational exposure conditions of female workers by requiring, inter alia, that a female worker should, on becoming aware that she is pregnant, notify her employer in order that her working conditions may be modified, if necessary. This notification shall not be considered a reason to exclude her from work; however, her working conditions, with respect to occupational exposure shall be adapted with a view to ensuring that her embryo or foetus be afforded the same broad level of protection as required for members of the public.

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