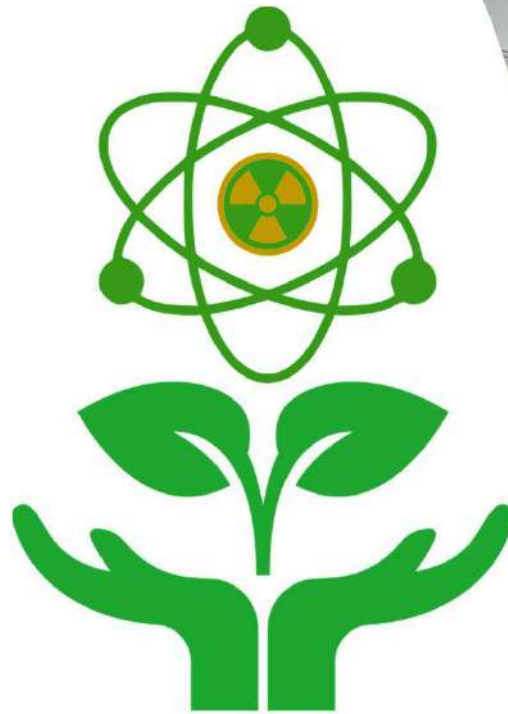




**WORLD
ENVIRONMENT
DAY June 5**

**NUCLEAR
ENERGY
& CLEAN
ENVIRONMENT
FOR SUSTAINABLE
DEVELOPMENT
NECE2024**



**June 5-6, 2024
DAE Convention Centre
Anushaktinagar, Mumbai**

POSTER COMPETITION

Registrations Open till May 20, 2024

Link: <https://www.iarp.org.in/upcoming-conferences/>

Session I: Ionizing Radiation For Inclusive Growth

Representative poster concepts: Natural radiation map of India; Natural radiation map of the world; Origin of Earth and formation of primordial radionuclides; Natural radionuclides surrounding us; Radioactivity in food we eat and air we breathe; Natural radiation map of India; Natural radiation map of the world; TENORMS and their sources; Cancer Atlas of India; Cancer Atlas of the World; Cancer and its confounding factors; Nuclear energy and SDGs; Uranium production in India and worldwide; Dose response models- LNT etc.

Session II: Nuclear Power for Sustainable Development in India

Representative poster concepts: Safe designs, safety systems and safe practices at NPPs; Strong regulatory framework; Impact of Indian nuclear power plants on the environment and the public; Natural Radiation observed in various matrices and its dose to members of public; Economic challenge of building nuclear reactors; SMRs and other new age designs; Energy security through stable fuel supply and prices; Hydrogen production and co-generation facilities, Solar field + Nuclear Power; Stats on job generation through nuclear power development

Session III: Communicating Nuclear and Radiation Science with Clarity

Representative poster concepts: How to increase public awareness and understanding of nuclear and radiation science; Discussing strategies to effectively use media for communicating nuclear and radiation developments; Addressing misconceptions about nuclear and radiation science; Busting myths around radiation; Highlighting positive stories from nuclear accidents; Tools for communicating nuclear and radiation science; Community interaction around nuclear facilities; Risk communication methods – cross sector comparisons; Stats on training programme and Awareness workshops



Session IV: Nuclear and Radiation Medicine in Health Care

Representative poster concepts: Current applications and recent advancements, including diagnostic imaging, radiotherapy, and personalized medicine; Address concerns about patient safety, accessibility, and affordability; Need for collaboration and partnerships among healthcare providers, research institutions, industry stakeholders, and regulatory agencies; Radiotherapy – types, benefits etc; Diagnostics – types, benefits etc; Radiopharmaceutical – types, applications, production etc; Accelerator based treatment; Health safety during treatment; Regulations governing practices and treatment; Positive stories

Session V: Nuclear and Radiation Technologies for Food & Agriculture

Representative poster concepts: Irradiation science; Irradiators – types, applications, benefits; Health and Safety of irradiation processes; Benefits of irradiation food; Benefits and positive stories in agriculture – sterile insect programme, land rejuvenation, etc.; Determine fertilizer uptake and the role of trace elements; Control or eliminate pests; Produce high yielding, high protein-containing varieties of food crops; produce disease- and weather-resisting varieties etc.

Session VI: Nuclear and Radiation Technology driven Industrial Growth

Representative poster concept: Radiation to help remove toxic pollutants; Radium, promethium and tritium with some phosphor used in reflective signs; Nucleonic gauges containing radioactive substances to measure the thickness; Well-logging devices uses radioactive source; Radioactive materials used in spacecraft to supply electricity; Radiation used for sterilization of disposable biological and medical supplies; Radiation used for polymerization and Cross-linking of plastics.

Instructions for Poster Preparation

- ❖ Posters must be illustrative and convey the concept under a particular session.
- ❖ Each poster should have a front content and a 200 word abstract
- ❖ Front content should have minimal running text (~ 50 words), 1 or 2 Graphs/Tables/Illustrations on the concept
- ❖ Representative, high quality photographs and iconographs are acceptable
- ❖ Each poster should have at least 1 eye-catching title that represents the concept
- ❖ Abstract can include 1 – 2 citations if needed
- ❖ Posters need not be exactly as the template provided, but they must at least fulfil the above points.
- ❖ Posters must be sent to nece2024@barc.gov.in in .pptx format
- ❖ Last date for poster submission is 30 April
- ❖ Posters will be judged based on the concept being presented, its suitability in the session and its overall artwork/aesthetics
- ❖ Best Posters will be a part of theme meeting poster book that would be released at NECE2024
- ❖ Best Posters will also be printed and displayed at the meeting
- ❖ Winners of best Posters will be invited to NECE2024 and their lodging and travel (up to 3rd AC train ticket) will be reimbursed.

Last Date of
Poster
Submission

30
April

Template for Poster Preparation

TITLE

Font Style: IMPACT

Font Size: 180

Poster Layout Dimension:

Width = 91 cm

Height = 120 cm

- Any Image pertaining to topic
- Only in .png or vector form
- No jpg

CONTENT

Font Style: Segoe UI

Font Size: 70

- Any Graph or Table etc.
- Any Image pertaining to topic
- Only in .png or vector form
- No jpg

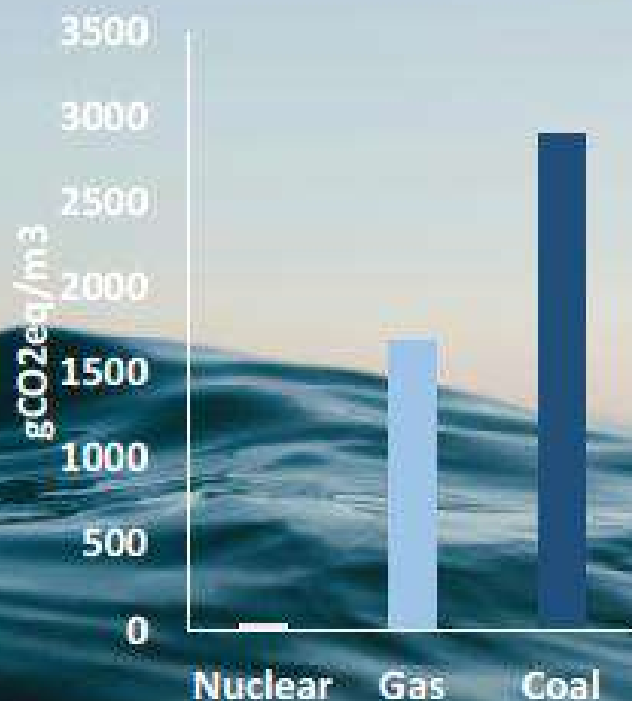
SLOGAN

Font Style: IMPACT

Font Size: 180

Sample Posters

Empowering the Future: Nuclear Desalination for Sustainable Water Solutions



Nuclear-powered water desalination using RO technology has a lower carbon footprint

Nuclear desalination utilizes heat and electricity generated by nuclear power plants to extract salt and minerals from seawater via distillation or membrane separation, primarily reverse osmosis.

It offers a low-carbon and cost-effective alternative to fossil fuel-based desalination methods.

Photo by Matt Roush from Shutterstock.com (Shutterstock.com) | Shutterstock.com | Shutterstock.com | Shutterstock.com



UNLOCKING CLEAN WATER WITH NUCLEAR DESALINATION

A microscopic view of a bacterial colony, showing a dense cluster of small, spherical cells. The background is dark, and the cells are illuminated with a greenish-yellow light.

Bacterial Bioremediation: Nature's Solution for Radioactive Waste!

From direct reduction by *Geobacter metallireducens* to genetically engineered solutions like *Deinococcus radiodurans*, microorganisms display biomineralization of uranium and biosorb radionuclides, paving the way for eco-friendly remediation strategies.

A microscopic view of a single, elongated, rod-shaped bacterium, *Geobacter metallireducens*, with a yellowish-orange glow. The background is dark red.

*Geobacter
metallireducens*

A microscopic view of a large, circular, multi-segmented bacterium, *Deinococcus radiodurans*, with a yellowish-orange glow. The background is dark yellow.

Microbial Heroes against Radioactive Wastes

*Deinococcus
radiodurans*

High Background Radiation Areas (HBRAs): Radiologically Safe!

HBRAs like Ramsar, Manavalakurichi and Guarapari have high radiation due to natural radium and uranium/thorium rich sands but no increased cancer risk, possibly due to improved immunity.

Average global dose is 2.4 mSv/year

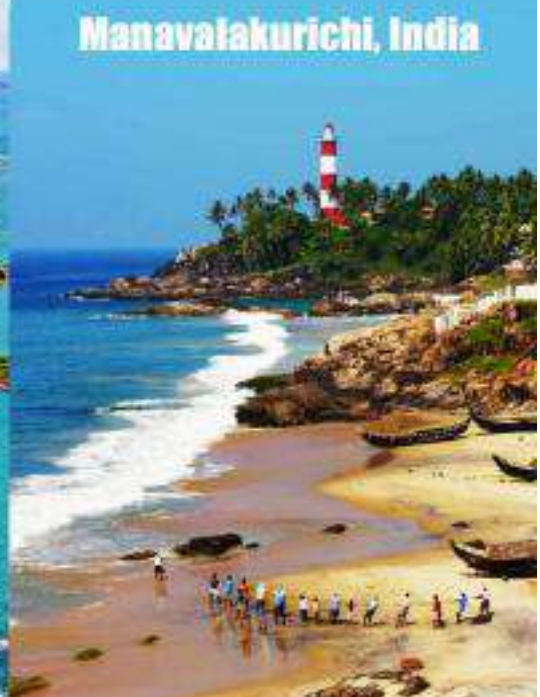
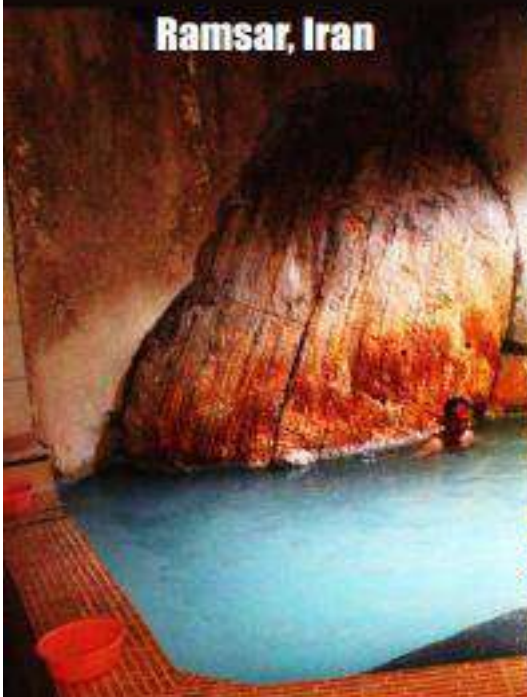
< 7 mSv/year

1 – 45 mSv/year

Ramsar, Iran

Guarapari, Brazil

Manavalakurichi, India



Public and Environment Safety Around NPPs through Zoning



Exclusion Zone
1 km

No public, only radiation workers working



Natural Growth Zone
5 km

Limited to No Human Population



Emergency Planning Zone

Human Population and all arrangements to respond in case of nuclear accident
16 km

Radiological Surveillance Zone

30 km Radiological monitoring and sampling for establishing baseline data

