

**National Institute of Technology  
Rourkela  
Karyashala  
High-End International Workshop  
on  
Integrating Innovations with Cost-  
effectiveness for Competing  
Electromagnetic Energy Assisted  
Food Processing and Packaging  
Technologies  
22<sup>th</sup> - 26<sup>th</sup> August 2022  
Hybrid mode (Offline & Online)**



**Organized by**

Department of Food Process Engineering  
National Institute of Technology Rourkela,  
Sundargarh, Odisha,  
India – 769008.

**Sponsored by**



## About the Institute

NIT Rourkela is one of the premier national level institutions for technical education in the country and is funded by the Government of India. Government of India has elevated the Regional Engineering College, Rourkela to a deemed university under the name of National Institute of Technology, Rourkela. The main objective of the Institute is to produce quality Engineers and Scientists in Graduate and Post-Graduate levels in various branches of Engineering and Science. The Institute is managed by the Board of Governors of National Institute of Technology (Rourkela) Society and vested with significant degree of administrative and financial autonomy. Government of India have recognized the Institute as a premier institution of repute and have developed it as a centre of excellence under plan funding.

## Department of Food Process Engineering

The Food process engineering department at National Institute of Technology Rourkela blends engineering disciplines with a strong understanding of food and food science.

The academic and research activities in the department focus on the frontier areas of food process engineering such as food properties and prediction, post-harvest operations, food quality and safety, transport process and kinetics, product development and ingredients innovation, food packaging and storage engineering, computer aided food engineering, energy efficiency, process control and efficiency, automation and manufacturing systems. Food process engineers can specialise in design, development, research, maintenance and operations such as processing, packaging, storage and transportation.



Registration link: <https://forms.gle/BBVxRAFLs2jng7vt7>

## About the Course

The sustainable production of food has been a significant concern in recent years. In the present context of scarcity of fresh water and strict environmental norms for effluent discharge, there is a need for a cost-effective alternative method that uses less water. Hence, there will be less or no effluent discharge. The use of electromagnetic energy, especially Microwave and radiofrequency waves in various food processing operations such as disinfestation, dehydration, sterilization and extraction, are emerging as important industrial processes. Application of non-ionizing radiations like microwaves, infrared and UV in food processing operations are being used for cleaner and effluent free, environment-friendly, cost-effective and less water demanding operations. Enlightening on conservation of freshwater, elimination of effluent treatment plants and boilers, food quality enhancement, food safety and security, and energy-saving during food processing operations will be the concrete output of this workshop.

### Speakers

Distinguished national and international experts in the field of food process engineering will be delivering the lectures.

## Course Content

- In-Package sterilization of food using electromagnetic radiation
- Ultraviolet rays as a non-thermal processing technology for microbial safety of foods
- Microwave-assisted green extraction for sustainable processing of food
- Microwaves and infrared: Current trends and latest developments on food security
- Effluent free food processing methods using non-ionizing electromagnetic waves
- Bridging the gap between R&D and industry: Perception of electromagnetic waves in food processing
- Post-COVID trends in the food processing industry
- Alternative food processing technologies on food hygiene and quality
- Industrial Application of Electromagnetic Energy
- Application of radiofrequency and gamma-rays in food safety
- Microwave and RF disinfestation of insects in stored products
- Application of Electromagnetic Energy in drying of foods

### Targeted Audience

This five days karyashala high-end international workshop on “Integrating Innovations with Cost-effectiveness for Competing Electromagnetic Energy Assisted Food Processing and Packaging Technologies” will be beneficial for the food engineering students along with researchers and food industrial people.

## PATRON

Prof. K. Umamaheshwar Rao  
Director, NIT Rourkela

### Course Coordinator

Dr. Parag Prakash Sutar  
Associate Professor  
Department of Food Process Engineering  
Phone: +91 96620 80068  
Mail ID: [sutarp@nitrkl.ac.in](mailto:sutarp@nitrkl.ac.in)

### Course Co-coordinator

Dr. V. Arun Prasath  
Assistant Professor  
Department of Food Process Engineering  
Phone: 91-95977 75712  
Mail ID: [varun@nitrkl.ac.in](mailto:varun@nitrkl.ac.in)

### Student Coordinators

Abhipriya patra  
Ph.D. Research Scholar,  
Department of Food Process Engineering  
Ph.: +91-7978470780  
Mail ID: [abhipriyapatra1004@gmail.com](mailto:abhipriyapatra1004@gmail.com)

Durgawati  
Ph.D. Research Scholar,  
Department of Food Process Engineering  
Phone: +8399974596  
Mail ID: [durgaluck95@gmail.com](mailto:durgaluck95@gmail.com)

