5 DAYS GIAN COURSE

on

MICROBIAL DECONTAMINATION THROUGH EMERGING TECHNOLOGIES FOR ENSURING FOOD SAFETY AND QUALITY

4th AUGUST - 8th AUGUST 2025

Course Instructor

Prof. V. M. Balasubramaniam
Professor of Food Engineering,
Department of Food Science and Technology,
Department of Food Agricultural and Biological Engineering
The Ohio State University, 2015 Fyffe Road,
333 Parker Food Science and Technology
Columbus, OH 43210 USA

Course Coordinators

Dr. Rachna Sehrawat
Assistant Professor
Department of Food Process Engineering,
National Institute of Technology Rourkela,
Sundargarh, Odisha, India - 769008

Dr. Mohd Khalid Gul
Assistant Professor
Department of Food Process Engineering,
National Institute of Technology Rourkela,
Sundargarh, Odisha, India - 769008

Foreign guest faculty

Prof. V. M. Balasubramaniam

Dr. V. M. Balasubramaniam is a Professor of Food Engineering at the Ohio State University, with joint appointments in Food Science and Technology, and Food, Agricultural and Biological Engineering. He earned his Ph.D. in Agricultural Engineering (Food Engineering) from the Ohio State University in 1993. His expertise lies in minimal food manufacturing technologies, focusing on nonthermal and thermal processing techniques like high-pressure processing (HPP) and pressure-assisted thermal processing to enhance food safety and quality.

Dr. Balasubramaniam's impactful career includes prior research roles at the Illinois Institute of Technology. He is a highly recognized leader, evidenced by numerous accolades such as the 2021 IFT Research and Development Award, the 2018 OSU CFAES Innovator of the Year Award, and fellowships in prestigious organizations like IFT, IAFoST, and ISAE. He serves as Editor-in-Chief of the Journal of Food Process Engineering. With over 132 peer-reviewed publications and a strong record of mentorship, Dr. Balasubramaniam has significantly advanced the field of food engineering and continues to contribute through research, teaching, and extensive professional service.

Course Overview

The food industry is evolving to meet the needs of health-conscious consumers who desire safer, healthier, and minimally processed foods devoid of synthetic additives. Advanced thermal and nonthermal process intensification technologies reduce product thermal exposure and preserve nutrition. Simultaneously, efforts are also underway on improving the sustainability of food manufaturing operations by reducing energy and water use as well as volorization approaches to reduce food waste. This course will offer an overview of food process design and the validation of various technologies aimed at ensuring food safety and minimizing nutrient loss. Students will explore strategies to enhance the sustainability of food processing operations, including conducting techno-economic analyses and life cycle assessments of different processing methods.

Course objective

- Learn engineering principles for preserving foods using advanced processing methods.
- To determine key microbial inactivation parameters – including inactivation rate constants, temperature sensitivity coefficients, and cumulative lethality – using kinetic modeling and thermal profiles, in order to validate and optimize food thermal processing for safety, shelf-life, and regulatory compliance.
- Identify critical food processing and product factors affecting microbiological safety and quality.
- Understanding the significance of energy efficiency, water reuse, and food waste management in ensuring sustainable, safe, and high-quality food production.

Course contents

Day 1: Reaction kinetics engineering

Day 2: Advanced thermal process intensification technologies

Day 3: Nonthermal process intensification technologies

Day 4: Food process regulations for ensuring food safety and process validation

Day 5: Sustainability of food processing operations and future outlook

Who can attend?

Executives, Food engineers and researchers from manufacturing, service and government organizations including R&D laboratories

Faculty from academic institutions and technical institutions

Students at all levels (B.Tech./ B.Sc./ M.Sc./ M.Tech./ Ph.D.)

Registration fees

Industry: INR 5000/-

Academic Institutions (Professors): INR 3000/-

Students: INR 1000/-

* Registration fees are non-refundable

UPI ID: 01389517841@sbi

REGISTER NOW

How to register ?

Participants are requested to click on the REGISTER NOW button mentioned above. Fill up the Google form and make payment for the GIAN course. Upload the transaction reciept along with the transaction ID. Additionally, all the participants are requested to select your accomodation type in the Google form.

Accommodation type

Accommodation facilities for the 5-days GIAN course are available at NIT and can be availed on payment basis. The facility will be provided at first come first serve. Below are the Room tariff:

HOSTEL: (Includes three meals/day)
Approximate INR 500/- (per day per person)

GUEST HOUSE (AC): (Doesn't include meals)
Ranging from Approximate INR 750 - 1200/- (per day per person)

 # Payment of the accomodation can be done upon arrival

For more details: CLICK HERE

Event mode: Offline

Participation certificate will be given to all the participants

Course Coordinators

Dr. Rachna Sehrawat

Dr. Rachna Sehrawat is an Assistant Professor in department of Food Process Engineering. She has keen interest in Valorization, modification of plant proteins, Value addition and utilization of by-products, Thermal and non-thermal processing of agricultural commodities.

Dr. Khalid Gul

Dr. Khalid Gul is an Assistant Professor in department of Food Process Engineering. He has keen interest in investigating different aspects of food colloids, such as their functionalities and modifications, sensory-satiety relationships, interactions between proteins and polysaccharides, encapsulation, and food safety.

Venue:
Dept. of Food Process Engineering,
NIT Rourkela, Odisha, India

Student Coordinators

Ankan Kheto	Ram Prasad
9932155209	9728418745
PhD scholar	PhD scholar

For any query email to: webinar.fpe@gmail.com,