



MHRD Scheme on Global Initiative on Academic Network (GIAN) Sponsored  
Short Course  
on



# Innovative Food Processing and Packaging Technologies

August 08 -13, 2016

Department of Food Process Engineering  
National Institute of Technology Rourkela, India

## Invited Faculty

Dr. Shyam S. Sablani  
Washington State  
University, WA, USA

## Host Faculties

Dr. P.P. Sutar  
Dr. Preetam Sarkar  
National Institute of  
Technology  
Rourkela, INDIA



## Objectives of the Course

- Discuss the theory and science that forms the basis for the development and application of novel thermal and non-thermal food processes for manufacturing of high-quality shelf stable foods.
- Highlight the significant developments in innovative food processing technologies that can produce foods with improved nutritional value, flavour, aroma and texture.
- Emphasize the latest developments in the packaging materials instrumental in the commercialization of new food processing technologies.
- Review food safety and regulatory compliance issues associated with thermal and non-thermal processing of foods.

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# Innovative Food Processing and Packaging Technologies

## Course Faculty



**Dr. Shyam S. Sablani**

Department of Biological Systems Engineering,  
Washington State University  
WA, USA

Shyam S. Sablani obtained his MS in mechanical engineering from the Indian Institute of Technology, Madras, India, and a PhD in food and process engineering from McGill University, Montreal. During the last twenty years in the field of food process engineering and food materials science, Dr. Sablani has published more **than 135 refereed journal articles, 25 book chapters**, and co-edited the **Handbook of Food and Bioprocessing Modelling Techniques**. His research background and interests are in the area of advanced food processing and packaging technologies.

**Till date he has received more than US\$ 4 millions funding for his research.** He has guided several masters and PhD students in Food Process Engineering. Dr. Sablani is a Professional member of the Institute of Food Technologists (IFT), member of International Association of Food Protection (IAFP), International Society of Food Engineers (ISFE), Technical Association of Pulp, and Paper Institute, Flexible Packaging Association. He received numerous honours and awards: Walter Hirschfeld Award from McGill University, George F. Steward Research Paper Award from the IFT, and Student Manuscript Award from the IFTPS. He serves as the **Scientific Editor** of the Food Engineering and Materials Science, and Nanoscale Food Science Engineering and Technology sections of the Journal of Food Science (Official Journal of American Association of Food Technologists). He has conducted workshops, short courses and training programs for the participants from India, Pakistan, Nigeria, and Latin America.



**Dr. Parag P. Sutar**

Department of Food Process Engineering  
National Institute of Technology Rourkela



He has been working in the area of food engineering with specialization in industrial scale sterilization and drying of agricultural, food and marine products. He has done his MTech from G. B. Pant University of Agriculture and Technology, Pantnagar, PhD from Indian Institute of Technology Kharagpur and Post Doc from Institute of Chemical Technology (formerly UDCT), Mumbai. He had taken advanced training from McGill University, Canada during his PhD program. He has developed food processing techniques and equipment for industry in Gujarat. Dr. Sutar has more than 30 publications which includes peer reviewed journal articles, book chapters, conference proceedings and e-courses. Currently, he is editor of Journal of Food Research and Technology. He holds R&D projects and is guiding PhD and Masters students. In the past he has given training to more than 60 industry personnel of Indian, Srilankan and multinational companies.

**Dr. Preetam Sarkar**

Department of Food Process Engineering  
National Institute of Technology Rourkela



He has been working in the area of food nanotechnology with specialization in food delivery systems. He has done MS from California State University and Doctorate from Purdue University. He has extensive research exposure of 7 years in USA and 2 years in India. Dr. Sarkar was recipient of Graduate student research and creative activities merit award at California and award from Institute of Food Technologists, USA for paper presentation. He has published several articles and book chapters of international repute. He holds R&D projects in food nanotechnology and currently supervising PhD and masters students.

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# INNOVATIVE FOOD PROCESSING AND PACKAGING TECHNOLOGIES

## Day-1

Lecture 1: 9:30 to 10:30 AM

Food deteriorative Factors and Their Control

Lecture 2: 10:45 to 11:45 AM

Pasteurization and Sterilization of Foods: Advanced Retort technologies

Tutorial 1: 2:00 to 4:00 PM

Thermal Process calculations: Integrating heat transfer and microbiological inactivation kinetics data.

## Day-2

Lecture 3: 9:30 to 10:30 AM

Microwave-Assisted Thermal Sterilization and Pasteurization

Lecture 4: 10:45 to 11:45 AM

High Hydrostatic Pressure Processing of Foods

Tutorial 2: 2:00 to 4:00 PM

Process design criteria: Dielectric properties, microwave heating rates, hot and cold spots, microbial and chemical degradation kinetics, pressure control.

## Day-3

Lecture 5: 9:30 to 10:30 AM

Ultra Violet: Surface Sanitation of Foods

Lecture 6: 10:45 to 11:45 AM

Pulsed Electric Field Processing of Foods

Tutorial 3: 2:00 to 4:00 PM

Process design criteria: Residence time, process validation, microbial and chemical degradation kinetics and sensory quality changes.

## Day-4

Lecture 7: 9:30 to 10:30 AM

Advanced Packaging material for foods

Lecture 8: 10:45 to 11:45 AM

Physical Properties of Packaging Materials

Tutorial 4: 2:00 to 4:00 PM

Measurement Methods: Physical properties measurement methods and applications in package design.

## Day-5

Lecture 9: 9:30 to 10:30 AM

Polymeric Packaging: Permeation of Gas and Water vapours

Lecture 10: 10:45 to 11:45 AM

Migration and Food-Packaging Interactions

Tutorial 5: 2:00 to 4:00 PM

Problem solving session with examples: Package design based on oxygen and water vapour transmission.

## Day-6

Lecture 11: 9:30 to 10:30 AM

Active and Intelligent Packaging

Lecture 12: 10:45 to 11:45 AM

Shelf-life Modelling of Packaged foods

Tutorial 6: 2:00 to 4:00 PM

Problem solving session with examples: Estimation of shelf life of packaged foods.

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# INNOVATIVE FOOD PROCESSING AND PACKAGING TECHNOLOGIES

## Participation

Executives, engineers and researchers from food industry, manufacturing, service and government organizations including R&D laboratories.

Student at all levels (BSc/BTech/MSc/MTech/PhD), faculty from academic institutions and technical institutions.

## Registration

Industry/ Research Organization from India:

One module: Rs. 4000/- , All modules: Rs. 7000/-

Academic Institutions from India:

One module: Rs. 2500/-, All modules: Rs. 4000/-

Participants from abroad:

All modules: US \$ 200

For group registration discount please contact the coordinators.

## Sponsorship

**Platinum:** Thirty minutes two slots for presentation, four complementary passes to all modules, one backdrop branding and one page ad in course notes.

**Gold:** Three complementary passes to all modules, backdrop branding and one page ad in course notes.

**Silver:** Two complementary passes to all modules and half page ad in the course material.

## Payment

Full payment must be received prior to the event.

All payment should be in favour of "Continuing Education, NIT Rourkela" payable at State Bank of India, REC Campus Branch, and Rourkela - 769 008.

Payment is done in full advance or at the time of registration.

## Travel and Accommodation

**Air:**Ranchi Airport (179 km by train from Rourkela), Kolkata Airport (419 km by train from Rourkela), Bhubaneshwar Airport (423 km by train from Rourkela), Raipur Airport (425 km by train from Rourkela)

**Rail:** Nearest station is Rourkela (5 km from NIT campus)

For accommodation and travel details please call Mr. Shiva Shirkole at 07064641005

Ms. Gitanjali Behera at 07381290206 or mail to [514fp1002@nitrkl.ac.in](mailto:514fp1002@nitrkl.ac.in), [514fp1003@nitrkl.ac.in](mailto:514fp1003@nitrkl.ac.in)

## Registration Form

A short course on

## Innovative Food Processing and Packaging Technologies

August 08 -13, 2016

Department of Food Process Engineering  
National Institute of Technology Rourkela, India

Name(s) of Participant: -----

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Company/Institution Name: -----

Address: -----

Pin: -----Tel/Cell:-----

Fax: -----

Email (s): -----

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## Payment Details

Amount Rs:-----

DD/Cheque No. and Date:-----

Signature(s)

## Please Contact

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**Co-Coordinator: Dr. Preetam Sarkar, Assistant Professor**  +91-7064031514

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