



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



Innovative Food Processing and Packaging Technologies

December 04 - 09, 2017

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

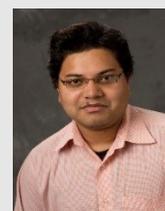
Department of Food Process Engineering
National Institute of Technology Rourkela



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 in 2003, PhD from Indian Institute of Technology Kharagpur in 2008 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. In the past he has given training to more than 60 industry personnel of Indian, Srilankan and multinational companies. Currently, he is working on industry oriented R&D projects and supervising PhD Students.

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 3 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

Polymeric Packaging: Permeation of Gas and Water vapours

Lecture 6: 10:45 to 11:45 AM

Shelf-life Modelling of Packaged foods

Tutorial 3: 2:00 to 4:00 PM

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

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

Ultra Violet: Surface Sanitation of Foods

Lecture 10: 10:45 to 11:45 AM

Migration and Food-Packaging Interactions

Tutorial 5: 2:00 to 4:00 PM

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

Day-6

Lecture 11: 9:30 to 10:30 AM

Active and Intelligent Packaging

Lecture 12: 10:45 to 11:45 AM

Pulsed Electric Field Processing of 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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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:
Rs. 4000/-
Academic Institutions from India:
Rs. 2500/-
Participants from abroad:
US \$ 200

Sponsorship

Platinum: Thirty minutes two slots for presentation, four complementary passes, one backdrop branding and one page ad in course notes.
Gold: Three complementary passes, backdrop branding and one page ad in course notes.
Silver: Two complementary passes and half page ad in the course material.

For group registration discount and sponsorship please contact the coordinators.

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. Contact us for online payment. In addition to above payment, participants are requested to first register the course through online GIAN portal at <http://www.gian.iitkgp.ac.in/GREGN/index> It is mandatory step of pre-registration of Rs. 500/-

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). Rourkela is on Mumbai-Howrah rail route.

For accommodation and travel details please contact: Ms. Gitanjali Behera (+91-7381290206) or mail to 514fp1003@nitrkl.ac.in

Registration Form

A short course on Innovative Food Processing and Packaging Technologies

Dec. 04 - 09, 2017

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

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

Company/Institution Name: -----

Address: -----

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

Fax: -----

Email (s): -----

Payment Details:

Amount Rs _____

DD/Cheque/ Online Transaction No.: _____

Date: _____

Date of Online preregistration at
<http://www.gian.iitkgp.ac.in/GREGN/index> _____:

Signature(s)

Contact Coordinator: Dr. P.P. Sutar +91-9662080068 sutarp@nitrkl.ac.in or **Co-Coordinator:** Dr. Preetam Sarkar +91-7064031514 sarkarpreetam@nitrkl.ac.in, Department of Food Process Engineering, NIT Rourkela (Odisha), INDIA 769 008