



The First Symposium

Sustainable technologies for food processing and preservation.


8. – 9.
FEBRUARY
2018

GOA, INDIA

09:00 - 09:30 **Registration**

09:30 - 09:40 **Welcome and Introduction to the Symposium**

Souvik Bhattacharyya, BITS Pilani

09:40 - 09:55 **Introduction of RE-food project**

Marit Aursand, SINTEF

09:55 - 10:25 **Food losses in the Indian seafood sector and solutions**

Ravishankar, CIFT

10:25 - 10:55 **Combined power and cooling systems for cold storage applications**

R Sarvanan, Anna University

10:55 - 11:15 **Coffee break and poster viewing**

11:15 - 11:30 **Marine rest raw material handling and quality during storage and processing**

Ana Carvajal, SINTEF

11:30 - 11:45 **Extraction and quality evaluation of calcium from discards of tuna and rohu**

AA Zynudheen, CIFT

11:45 - 12:00 **Rest raw materials from salmon as a valuable source for gelatin and bioactive compounds**

Rasa Slizyte, SINTEF

12:00 - 12:15 **Exploring the potential of rest raw material of oilseed industries as biopesticides**

Nutan Kaushik, AMITY University

12:15 - 12:30 **The production of fish protein hydrolysates: Major costs and methods of their minimizing**

Inna Petrova, NTNU

12:30 - 12:45 **Utilization of plant byproducts and process optimization**

Kaunsar Jabeen Shinwari, IIT Kgp

12:45 - 13:00 **Revisiting the utilization of Whey for the development of Gluten Free Foods**

Sunil Khatkar, GADVASU

13:00 - 13:50 **Lunch**

13:50 - 14:10 **Heat pump assisted drying**
Trygve Eikevik, NTNU

14:10 - 14:25 **Low temperature drying and atmospheric freeze-drying of brown seaweeds**
Ignat Tolstorebrov, NTNU

14:25 - 14:40 **Natural refrigerants in refrigeration equipment onboard marine vessels**
Kristina Widell, SINTEF

14:40 - 14:55 **Solar energy based refrigeration systems for cold storages**
M Ramgopal, IIT Kgp

14:55 - 15:10 **Quality & safety of frozen-thawed Atlantic cod (*Gadus morhua*) fillets during chilled storage**
Guro Møen Tveit, SINTEF

15:10 - 15:40 **Coffee break and poster viewing (poster authors available by their posters for discussions)**

15:40 - 15:55 **Optimal and energy efficient storage of vegetables to prevent losses**
Erlend Indergård, SINTEF

15:55 - 16:10 **Performance improvement of solar powered Thermoelectric refrigerator using Phase change material and air/water coolant for thermal management**
Aashish Kumar, IITKgp

16:10 - 16:25 **Energy efficient processing of seafood or Sustainable chilling and superchilling of fish**
Tom Ståle Nordtvedt, SINTEF

16:25 - 16:40 **Integrated Supermarket Refrigeration for High Ambient Temperature Region**
Stefanie Blust, NTNU

16:40 - 16:55 **Control strategies for CO₂ based air conditioning systems**
Mihir Hazarika, IIT Kgp

16:55 - 17:00 **End of Day 1**

19:30 **Dinner for symposium participants**



PLACE: BITS Pilani campus, Goa, India.

TIME: 8. Feb. 9:00 – 9. Feb. 16:00.

The symposium is jointly organised by SINTEF Ocean, BITS Pilani and IIT Kharagpur, funded by the INTPART-programme subsidiary of The Research Council of Norway.



Annual meetings to foster new relations and opportunities

Re-FOOD is an international partnership for research and education in energy efficient resource utilization in food value chains between Norway and India. The project is funded by the Research Council of Norway under the INTPART program focusing on developing an integrated approach to deal with the challenges in the field of bio-economy with focus on sustainable utilization of food resources to meet the growing global demand for food and feed ingredients. Re-FOOD will focus on building a long-term cooperation between Norwegian partners SINTEF Ocean and NTNU and Indian partners CSIR-CFTRI, IIT Kharagpur, Amity University and BITS Pilani as well as other industry and governmental stakeholders in both countries.

An annual symposium will be used to disseminate the research, innovation and education results achieved by Re-FOOD as well as an opportunity to create new contacts to strengthen the cooperation on bio-economy.

About the Group Discussions

Several group discussions will be held on Day 2 on different topics. In these, we will focus on all that has been presented during this symposium; foster new ideas and new relationships – hopefully making for great project and research opportunities in the near future.

9:00 - 9:10

Welcome Day 2

Marit Aursand, SINTEF

9:10 - 9:30

ReValue project - Innovative technologies for improving resource utilization in the Indo-European fish value chains

Maitri Thakur, SINTEF

9:30 - 9:45

Robotics at IIT Kharagpur with applications towards automated applications in food grading and quality assessment using image processing

C.S. Kumar, IIT Kgp

9:45 - 10:00

Handling food with sensitivity and care, challenges for robotic grasping and manipulation

Aleksander Eilersten, SINTEF

10:00 - 10:15

Simplifying automation in the food industry using deep learning and virtual reality

Jonatan Sjølund Dyrstad, SINTEF

10:15 - 10:30

An information architecture for traceability in Public Distribution System (PDS) supply chain using EPCIS framework

Sandeep Singh, IIT Kgp

10:30 - 10:45

Importance and evolution of food quality for sustainability and prosperity of Indian food industries in the era of globalized food chain

Avik Mukherjee, CITK

10:45 - 11:05

Coffee break

11:05 - 11:25

To be decided

11:25 - 11:45

Utilization of bio based rest material

Dipak Chaudhari, Nishiindo Foods

11:45 - 12:00

Energy efficient fresh fish processing and marketing- a start up company experience in Kerala

*Damodaran Nambudiri,
Kerala University of Fisheries & Ocean Studies*

12:00 - 12:15

India - Norway Research Collaboration

Inger Midtkandal, Royal Norwegian Embassy – New Delhi

12:15 - 13:15

Lunch

13:15 – 16:00

Group Discussions

- Utilization of robotics in food handling
- Utilization of rest raw materials
- Cold chain management and energy efficiency
- Industrial drying

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Posters for the Symposium

Sustainable technologies for food processing and preservation.

Potential future applications for bioactive components derived from seaweed

Arntzen Espen, NTNU

Vacuum impregnation: A promising micronutrient fortification tool in foods

Banerjee Soumitra, Centre for Incubation, Innovation, Research & Consultancy, Jyothy Institute of Technology

Handling food with sensitivity and care, challenges for robotic grasping and manipulation.

Eilertsen Aleksander, NMBU/SINTEF Ocean

Quality of Food through Vision Systems

Eilertsen Aleksander, NMBU/SINTEF Ocean

Bio-economy in a food perspective - Knowledge delivery from university to society

Falch Eva, NTNU

Freeze Concentration

Ghadiyali Hritvika, College of Food processing Technology and Bio Energy

Conditioning of tamarind seed for easy removal of Testa.

Haldar Swarna, CIIRC - JYOTHY Institute of technology

Control strategies for CO2 based refrigeration systems

HAZARIKA MIHIR MOUCHUM, Indian Institute of Technology, Kharagrup

Prolonged shelf life of fresh seaweed by storage in refrigerated

Indergård Erlend, SINTEF Ocean

Restructuring Whey Protein Employing Ultrasound: A Non-thermal Techniques for value addition of whey protein

Khatkar Anju, Punjab Agricultural University

Cold Plasma: A Novel non Thermal technology for food Processing

MACWAN AMEE J., College of Food Processing Technology and Bio Energy

RADIOFREQUENCY HEATING

MACWAN AVANEE JITENDRA, College of food processing Technology and Bio Energy

Cold plasma technology

Manda Devi Ningthoujam, College of Food Processing Technology and Bio Energy

Automated Geometric Properties Measurement System for Food Grains based on Image Processing

Patel Manish, JNKVV-College of Agriculture

Fluidized bed freezer for green peas

Raval Harsh M. and Sharma Harsh P., Department of Food Technology, College of food processing technology and bio energy, Anand

DEVELOPMENT OF READY-TO-COOK FISH STEAKS FROM CATLA FISH

Sharma Priyam, student

Effect of agro industrial waste on production of beta carotene by *Rhodotorula glutinis*

Sharma Rajan, Dr. SSBUI CET, Panjab University, Chandigarh

Health benefits of chillies: A marker for BMI and improving antioxidant status among Indians

Sodhani Shradha and Chaturvedi Saumya, Amity University

Vacuum Impregnation: A novel technique for production of low acrylamide calcium fortified potato chips

Thakur Dr. Monika and Tiwari Pratibha, Amity University Uttar Pradesh

Microbial contamination of fish processing plants

Thomassen Gunn Merethe Bjørge, NTNU

Quality of gillnetted coastal cod

Tveit Guro Møen, SINTEF Ocean

Extending shelf life and reducing waste - technologies in the food industry

Tyflopoulos Evangelos, NTNU

Radiofrequency heating

Vaja Vidhi, college of food processing technology and bio-energy

Quality evaluation of cookies prepared using jaggery, honey and stevia by replacing sugar

Kharkwal Neha, University- Anand Agricultural University

Water absorption kinetics of pearl millet during soaking and its effect on physical properties of millet flour

Paliwal Ankit, Amity Institute of Food Technology

Studies on Preparation of Caffeine Free Coffee Mix From Rest Raw Material-Date Pits

Pathan Fayaj, MIT College of Food Technology

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