

Save the Date

What: 3rd Interdisciplinary Winter School
Graduate Center
Munich School of Engineering

When: February 18 to 22, 2019

Where: TUM Science & Study Center
Raitenhaslach, Germany

Costs: 500,00 € (incl. excursion, board and lodging)

Important Dates

Application deadline: November 16, 2018
Please send your application including your CV and
the supervisor's recommendation letter to
Dr. Petra Liedl, liedl@mse.tum.de

Notification date: December 10, 2018

Publication of programme: January 15, 2019



Scientific exchange, source: TUM/A. Eckert

Directions to Raitenhaslach



TUM Science and Study Center Raitenhaslach
Raitenhaslach 11
84489 Burghausen

Technische Universität München
Graduate Center Munich School of Engineering

Lichtenbergstr. 4a
85748 Garching
www.mse.tum.de

Food and Energy

3rd Interdisciplinary Winter School

Graduate Center,
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Raitenhaslach



Food and Energy, source: Prof. H. Mempel/HSWT

Food and Energy

3rd Interdisciplinary Winter School Graduate Center Munich School of Engineering

The food industry is facing emerging challenges: Food production accounts for 30% of global final energy consumption; processing and distribution as well as retail and preparation are the main factors for a highly inefficient industry. This problem will get worse with 80% of the 10 billions people living in cities in 2050. With the transformation to renewable energy the production of fertilizers is facing a big change. Food scandals upset consumers and make the call for regional products even louder. Due to climate change and droughts crop failures are predicted to occur more often. During the Winter School 2019 „Food and Energy“ we address these challenges and discuss approaches to a sustainable food production and supply chain.

Topics

- Food-energy-nexus
- Interaction of oil price and food costs
- Sustainable production processes
- Energy-efficient supply chains
- Consumer behavior and food quality
- Food waste
- Daylight-free production
- Vertical farming



Grain measurement, source: TUM/U.Benz

Goals

- Understanding the relation between food and energy
- Realizing the connected challenges in times of climate change and population rise
- Exploring sustainability in the food production, processing and supply chain
- Examining the relation between quality of food and sustainability
- Discovering cutting-edge daylight-free cultivation
- Networking and scientific exchange
- Starting discussions for possible future collaborations

Methods

- Topic lectures
- Tutorials
- Creative labs
- White paper meetings
- Interdisciplinary discussions
- Poster presentations by PhD students
- Experiencing the importance of interdisciplinary approaches



Dairy technology, source: TUM/A.Eckert

Lecturer and Topics

[Prof. T. Hamacher, TUM: Food and Energy](#)

- Energy demand for food production
- Relation between oil price and food costs
- Food in a world without oil

[Prof. H. Mempel, HSWT: Horticultural Production and Resource Economics](#)

- History and principles of food preservation
- Sustainability in production systems and supply chains
- Maintaining post-harvest quality

[Prof. J. Roosen, TUM: Food Waste and Consumer Behavior](#)

- Food Waste: extent and impact
- Consumer behaviour and the buying cycle
- Designing intervention measures to reduce food waste

[Prof. J. d. Besten, HAS, NL: New Cultivation Systems](#)

- Daylight-free multilayer cultivation
- Horticulture production
- City farming and vertical farming



Vertical farming, source: Prof. H. Mempel/HSWT