

1st ANNOUNCEMENT

Seminar on Emerging Dairy and Food Technologies Micro- and Macrostructure Design and Analysis - Gels, Foams, Emulsions, Interfacial Reactions –

Tuesday, Sept. 12th, till Thursday, Sept. 14th, 2017

Technical University of Munich
TUM School of Life Science at Freising-Weihenstephan

Organisation

Univ.-Prof. Dr.-Ing. Ulrich Kulozik
Research Foundation for Dairy Science

Participation fee: 850 € 3-day seminar-fee / 780 € Members of foundation and Weihenstephan alumni associations / 500 € Members of public institutions

Early-bird registration till May 31st: 780 Euro / 720 Euro / 450 Euro

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Hotel information see our website

Dinner information see our website

Homepage: www.technologieseminar-lmvt.de

Seminar on Emerging Dairy and Food Technologies
Micro- and Macrostructure Design and Analysis
- Gels, Foams, Emulsions, Interfacial Reactions –

PROGRAM

Tuesday, September 12th, 2017 (start 12:30)

Gels

- Mechanisms of gel formation: protein and polysaccharide gels in food systems
- Innovative applications of protein gel systems: Supercritically dried Aerogels as transportation or protection matrix
- Hybrid gels: synergistic effects and limitations between proteins, polysaccharides and inorganic gelling agents
- Innovative approaches for proteins in food: plant proteins and their techno-functional properties
- Functionalization of proteins by means of gelling mechanisms: targeted denaturation and micro particulation

Wednesday, September 13th, 2017 (beginning 8:30)

Foams, Emulsions

- Innovative approaches for the stabilization of foams and emulsions by particles of biogenic origin
- Structure formation in dispersed protein systems
- Mechanistic understanding of structure-function relationships facilitates gentle drying of sensitive biomolecules in aerated matrices
- Stabilization of oil in water emulsions by functionalized egg yolk fractions with focus on freeze thaw stability
- Development of all-natural fruit snacks by means of innovative drying techniques
- Structural characterization of milk protein-stabilized foams: a multiscale approach

Tools to affect/improve functions

- Functionalization of egg yolk by means of fractionation and pre-treatment
- Functionalization of separated casein and whey protein fractions by using different processing side streams as diafiltration media during membrane separation
- Alteration the function of human milk by centrifugation and membrane separation to meet the special needs of premature infants
- Selective thermal aggregation of whey proteins and subsequent centrifugal separation to obtain allergen free whey
- Systematic design to control whey protein hydrolysis for the production of value-added products
- Enzymatic crosslinking for the removal of caseinomacropeptide (CMP) from rennet whey for infant food manufacture

Wednesday, September 13th, 2017 (beginning 14:00)

Practical Demonstrations at the Food Process Engineering Pilot Plant & Labs

The entire pilot plant and lab area will be shown to amend topics presented during the seminar and to highlight practical effects and unit operations of particular interest. Participants can individually select certain areas of special importance for themselves.

- Bioprocessing Technologies (Microbial batch and continuous fermentation/Enzymatic hydrolysis and crosslinking of proteins)
- Membrane Separation Techniques (Micro-, Ultra-, Nanofiltration and Reverse osmosis/ Dynamic and crossflow membrane techniques)
- Centrifugal separation and fractionation techniques (Disc separator, decanter)
- Drying Techniques Demonstrations (Spray drying, Vacuum drying, Freeze drying/Microwave assisted vacuum)
- Microencapsulation Technologies (Emulsification, aerogel and spray drying methods)
- Thermal Processing Techniques (Indirect heating, Direct Steam Injection and Infusion)
- Protein Microparticulation by extrusion cooking technology
- Microencapsulation, Emulsification, Foaming and Gel formation techniques, Rehydration of powders
- Microbiological, chemical, physical characterization (Rheology and particle size measurements/Calorimetry and interfacial characterization/Flow cytometry and FTIR technologies)

Thursday, September 15th, 2017 (08:30- end 13.00)

Analytical techniques

- Measuring techniques for the characterization of functional properties of proteins (biopolymers) – Interfacial properties
- Rheological techniques for the assessment of structures in food systems
- Assessment of protein-protein interactions by MALS
- Measuring techniques for 3D- μ -CT-assessment of gel and foam structures
- Visualization of structures by means of Image Analysis Techniques
- Characterization of physical properties of biopolymers and their derivatives: Zeta-potential, hydrophobicity, particle size distribution, water binding (NMR) capacity