הרצאה

הנכם מוזמנים להרצאה מיוחדת של הפקולטה להנדסת

ביוטכנולוגיה ומזון.

Prof. Alexander Mathys

בנושא:

Sustainable food processing as driver of the bioeconomy

Abstract:

The seminar will be held in English

Sustainable food processing as key driver of the bioeconomy covers process-product-operation interactions, where selected examples of innovative thermal, electro-magnetic, mechanical and combined processes will be introduced hereafter.

Modular thermal micro process engineering was effectively applied to improve upscaling of microbial inactivation processes, but its mechanical process elements could also be used for tailored structure formation and synthesis. Electro-magnetic based pulsed electrical field processing enables an efficient use of biomass and energy within the potato and fruit juice production. The application of optimized treatment chambers enabled the gentle pasteurisation of dairy formulations while keeping their functional high value added ingredients. During mechanical high pressure processing in batch, focused investigations on the property changes within pure water and more complex systems, such as microorganisms, enabled a detailed understanding of the respective process-product-operation interactions. After studying spore inactivation in very detail, classical high pressure preservation could be optimized through combined thermal and mechanical processes such as high pressure thermal sterilisation as well as continuous ultra-high pressure processing up to 400 MPa as innovative multi hurdle technologies for gentle sterilisation of healthy and high quality food. Advanced approaches relying on innovative raw materials from algae or insects and their connected biorefinery concepts could even increase the impact of sustainable food processing. Such innovative value chains could be linked to novel opportunities to value alternative protein sources. By using novel proteins from algae and insects, food security and sustainability of the protein supplies can be significantly improved. Holistic life cycle sustainability assessment, aligned with the introduced process innovations, can evaluate the suggested solutions on a multi parameter base, in terms of improved food production sustainability. A focused knowledge transfer via food processing workshops as well as student and expert exchanges will assure the mid and long term impact of the presented solutions.

יום ד' 7.3.18, כיתה 300, 14:00 – 15:00