

DELEGATE BOOK

2ND INNOVATIONS IN FOOD SCIENCE & TECHNOLOGY

Conference Partners:



PROGRAMME

TUESDAY, 25 JUNE 2019

12:30 - 13:00	Registration/Welcome Reception
12:30 - 16:00	Registration continued.....
13:00 - 13:10	Conference Opening
13:10-13:40	Keynote-1. Surface finish of stainless steel and cleanability Wouter Burgraaf, European Hygienic Engineering and Design Group, Netherlands
13:40-14:10	Keynote-2. Sustainability of food packaging Prof. H.C. Langowski, Technical University of Munich, Germany
14:10-14:35	Keynote-3. Debunking misinformation about food Huub Lelieveld, Veslemøy Andersen: Global Harmonization Initiative
14:35-15:00	Keynote-4. The search for new protein sources for plant-based meat alternatives Atze Jan Van Der Goot, Food Process Engineering Laboratory, Wageningen University & Research, The Netherlands
15:00 - 15:30	Coffee/Tea Break

THEME: FOOD PROCESS ENGINEERING

Room	Panaroma Room
Chair Co-Chair	Atze Jan Van Der Goot, Wageningen University, Netherlands H.C. Langowski, Technical University of Munich, Germany
15:30-15:55	INV 1: Dry food processing for sustainable production of high-quality foods <u>Maarten Schutyser*</u> , Food Process Engineering Laboratory, Wageningen University & Research, The Netherlands
15:55-16:20	INV 2: The role of polyphenols in novel biorefinery processing <u>Konstantina Kyriakopoulou*</u> , Food Process Engineering Laboratory, Wageningen University & Research, The Netherlands
16:20-16:40	Title: Food waste recovery & innovation <u>Charis Galanakis*</u> , Food Waste Recovery Group, ISEKI Food Association, Vienna, Austria
16:40-17:00	Title: Increasing the local effectiveness of aerosol application by selective flow field Modifications <u>Yvonne Ringelspacher*</u> , A. Delgado, Institute of Fluid Mechanics, Friedrich-Alexander-University Erlangen-Nürnberg, Germany
17:00-17:20	Title: Biorefinery residues for food packaging applications <u>Marisa Costa Gaspar*</u> , Cátia Mendes, Maria da Graça Carvalho, Mara Elga Medeiros Braga, University of Coimbra, Coimbra, Portugal

WEDNESDAY, 26 JUNE 2019

Session	Innovative Processing Technologies	
Chair Co-Chair	Petros Taoukis, National Technical University of Athens, Greece Huub Lelieveld, Global Harmonization Initiative	
09:00-09:25	INV 3: Comparative study of the effect of novel treatments on quality and shelf life of cultured seabass and seabream. <u>Theofania Tsiron</u> , Ioanna Semenoglou, Athina Ntzimani, George Dimopoulos, Maria Tsevdou, <u>Petros Taoukis*</u> National Technical University of Athens, Greece	10:10-10:30 Title: Inline monitoring of fermentation activity during beer production with ultrasound <u>Michael Metzenmacher*</u> , Dominik Geier, Thomas Becker Chair of Brewing and Beverage Technology, Technical University of Munich, Freising, Germany
09:25-09:50	Title: Local Adaptive Drying by means of Nozzles <u>Bastian Schoeneberger*</u> , Antonio Delgado, Institute of Fluid Mechanics, Friedrich-Alexander-University Erlangen-Nürnberg, Germany	10:30-11:00 Tea/Coffee break/Poster Session
09:50-10:10	Title: Development of an inline sensor for the analysis of process-relevant properties during bakery production using Dynamic Laser Speckle Imaging <u>Stefan Steinhäuser*</u> , Ehsan Fattahi Evati, Dominik Geier, Thomas Becker Chair of Brewing and Beverage Technology, Technical University of Munich, Freising, Germany	11:00-11:20 Title: Supercritical carbon dioxide extraction of oil from Andean lupin seeds <u>Miao Yu*</u> , Kai Kniepkamp, Juliette Rudzick, Jan Pieter Thie, Geert-Jan Witkamp, Rob van Haren Hanze University of Applied Sciences, Groningen, Netherlands
		11:20-11:40 Title: Are bacterial spores activated by High Pressure treatment at 20°C ? <u>Hélène Simonin*</u> , Chloé Modugnoi, Jean-Marie Perrier-Cornet Univ. Bourgogne Franche-Comté, AgroSup Dijon, PAM UMR A 02.102, Dijon, France

IFA-O-10: Comparative study of the effect of novel treatments on quality and shelf life of cultured seabass and seabream.

Theofania Tsironi, Ioanna Semenoglou, Athina Ntzimani, George Dimopoulos, Maria Tsevdou, Petros Taoukis*
National Technical University of Athens, Greece

Abstract: The aim of the study was to investigate the effect of nonthermal (high pressure/HP, osmotic dehydration/OD, pulsed electric fields/PEF) and minimal processing methods (surface decontamination) on the quality and shelf life of farmed gilthead seabream and European sea bass fillets during refrigerated storage.

Gilthead seabream (*Sparus aurata*) and European sea bass (*Dicentrarchus labrax*) fillets were treated using HP, OD or PEF as alternative approaches to the conventional post-harvest fish processing methods. The incorporation of natural organic acids (i.e. lactic acid) at different concentrations in the washing water and/or in icing media was also tested for its efficacy to reduce initial microbial load and prolong shelf life. Samples were stored under controlled isothermal and variable conditions (0-15°C). Quality assessment was based on microbiological analysis (total viable count, *Pseudomonas* spp., *Enterobacteriaceae* spp.), pH, lipid oxidation, total volatile basic nitrogen, colour and texture measurement and sensory scoring.

The results of the study indicated that HP led to improved quality stability during subsequent refrigerated storage and significant shelf life extension (up to threefold), in terms of microbial growth, physicochemical and organoleptic degradation of fish. OD resulted in significant shelf life extension (7 days and up to 18 days for untreated and osmo-treated samples at 5°C, respectively). PEF enhanced the mass transfer phenomena during osmotic treatment but did not affect significantly the quality and shelf life of fish fillets. Initial surface decontamination up to 1.5 log cfu/g by the addition of organic acids in the washing/icing water resulted in 2-3 days shelf life extension of fish fillets at 0°C.

The results of the study indicated that the application of nonthermal and minimal processing led to improved quality stability during subsequent refrigerated storage and significant shelf life extension, in terms of microbial growth, physicochemical and organoleptic degradation of the fillets.

IFA-O-11: Development of an inline sensor for the analysis of process-relevant properties during bakery production using Dynamic Laser Speckle Imaging

Stefan Steinhauser*, Ehsan Fattahi Evati, Dominik Geier, Thomas Becker

Abstract: Fewer and fewer trained and experienced specialists are available for the production of baked goods. However, the determination of the kneading optimum of dough during kneading and the optimal state of ripeness of a dough piece during proofing is usually carried out by visual and tactile control by those very specialists. During baking, the oven drive and crust colour are visually checked. Due to the absence of comprehensive sensory control in large-scale production plants, kneading, proofing and baking are executed according to predefined programs. Process errors or variation of raw materials can lead to the production of bakery products that do not meet the expectations of neither the manufacturer nor the consumer.

Dynamic Laser Speckle Imaging (DLSI) is a method to tackle the challenges of industrial baking production. In DLSI, a laser beam is directed onto the surface of a sample. The light is scattered and forms a characteristic – in biological samples dynamic – pattern, the so-called laser speckle. A camera mounted next to the laser enables the recording of the laser speckle and the sample. During proofing, the activity of light scattering centres is increased by the development of gas, during baking, the activity decreases due to the formation of the crust. By recording the activity of light scattering centres, evaluating the speckle patterns and correlating them to the product parameters of the intermediate products (e.g. dough pieces),