Edible Applications Technology (EAT) Interest Area
Tentative Technical Program
As of February 12, 2020

This presentation list is not final and is subject to change.

The presenter is the first author, or the author indicted with an asterisk (*).

Monday Morning

EAT 1: Structuring of Liquid Oil for Low SAFA and Non-trans Applications
Chairs: Karel Hrncirik, Upfield, The Netherlands; and Sarah Willett, University of Georgia, USA

Wax-based Oleogels – Deciphering the Molecular Composition Functionality Relation. Eckhard Flöter*, Till Wettlauffer2, and Vivien Schreiber, 1Technical University Berlin, Germany; 2Lab of Food Process Engineering TU Berlin, Germany

Development and characterization of novel bigels for edible applications. Mark A. Bollom*, Stephanie Clark, and Nuria C. Acevedo, Iowa State University, USA

Thermo-mechanical behavior of different Ethylcellulose-Monoglycerides mixtures during the development of Organogels. Miriam A. Charo-Alonso1, Martha Garcia-Ortega1, Anaid De la Peña-Gil2, and Jorge F. Toro-Vazquez*, 1Universidad Autónoma de San Luis Potosí, Mexico; 2Universidad Autónoma de San Luis Potosi, Mexico

Structuring liquid oil into viscoelastic gel using Pickering pea protein nanoparticles: opportunities and challenges. Chi Diem Doan*, Koen Dewettinck2, and Supratim Ghosh1, 1University of Saskatchewan, Canada; 2University of Gent, Belgium

Characterizing and modelling novel rice bran wax and gelatin bigels to determine structure. Nuria C. Acevedo1, and Ariana Saffold*, 1Iowa State University, USA; 2Iowa State University, USA

Use of Fractal Analysis to Characterize the Structure of Whey Protein Colloidal Gels. Clifford Park*, Osvaldo Campanella, and Farnaz Maleky, Ohio State University, USA

Structuring Liquid Oils Through Enzymatic Glycerolysis. Reed A. Nicholson*, and Alejandro G. Marangoni, University of Guelph, Canada

Molecular Dynamics Simulations to Probe Fat Crystallization and Oleogel Structuring of Edible Oils. Stephen R. Euston*,1, George Dalkas2, Nicole Green3, and Dèrick Rousseau3, 1Heriot-Watt University, UK; 2Heriot-Watt University, United Kingdom; 3Ryerson University, Canada
Understanding Self-Association and Tubule Formation in Phytosterol-Based Oleogels. Stephen R. Euston*1, Paul Clegg2, George Dalkas3, and Andrew Matheson3, Heriot-Watt University, UK; University of Edinburgh, United Kingdom; Heriot-Watt University, United Kingdom

The addition of selected minor oil components to pure triglyceride oils modify the properties of β-sitosterol/γ-oryzanol oleogels. Maria Scharfe*1, and Eckhard Flöter2, TU Berlin, Deutschland; Technical University Berlin, Germany

Engineering the plasticity of wax-based oleogels. Megan E. Govers, Andrew J. Gravelle*, and Alejandro G. Marangoni, University of Guelph, Canada

Structuring Edible Oils with Hydrocolloids: Where do we stand? Ashok R. Patel*, Guangdong Technion Israel Institute of Technology, China

EAT 1.1/PHO 1: Novel Phospholipids: Pharmaceutical, Functional and Edible Applications
Chairs: Ernesto Hernandez, Advanced Lipid Consultants, USA; and Serpil Metin, Cargill R&D, USA

Optimization of lecithin modification with phospholipase-D for high phosphatidyethanolamine content to increase tocopherol's antioxidant efficacy. Eric A. Decker, and Mitchell D. Culler*, University of Massachusetts Amherst, USA

Complex Lipid Coated Milk Fat: Its Biological Role in Early Life Programing for Later Life Health. Sandra Einerhand*, Einerhand Science & Innovation BV, The Netherlands

Use modified lecithin for stabilization of emulsions in beverages. Ernesto M. Hernandez*, Advanced Lipid Consultants, USA

Bigel systems as means to protect probiotics during in vitro digestion. Mark A. Bollom*, Stephanie Clark, and Nuria C. Acevedo, Iowa State University, USA

Sous Vide Cooking Changes Lipid Bioaccessibility of Egg Yolk. April (Xu) Xu*1, Elizabeth A.L West1, Iris Joye1, Maria G. Corradini2, and Michael Rogers1, University of Guelph, Canada; University of Massachusetts Amherst, USA

Development and characterization of multilayer microcapsules with chia and sunflower by-products. Claudia N. Copado, Luciana M. Julio, Vanesa Y. Ixtaina, and Mabel Tomás*, CIDCA (CONICET-UNLP), Argentina

Monday Afternoon

EAT 2: Crystallization Behavior of Fats and Oils
Chairs: Eckhard Flöter, Technical University Berlin, Germany; and Gianfranco Mazzanti, Dalhousie University, Canada

Effects of Tripalmitin and Tristearin on Crystallization and Melting Behaviour of Coconut Oil. Hironori Hondoh*1, Busakorn Mahisanunt2, and Satoru Ueno3, University of Shizuoka, Japan; Hiroshima University, Japan; Graduate School of Biosphere Science, Hiroshima University, Japan
Computing the Fractal Dimensions of Aggregates. David A. Pink*1, Arun S. Moorthy2, and Fernanda Peyronel3, 1St. Francis Xavier University, Canada; 2National Institute of Standards and Technology, USA; 3Dept. of Food Science, University of Guelph, Canada

Co-crystallization properties of PPP, POP, OPP and POO and palm oil dry fractionation. Sabine Danthine1, and Véronique Gibon*2, 1Univeristy of Liège, Belgium; 2Desmet Ballestra Group, Belgium

Crystal memory near discontinuous triacylglycerol phase transitions: models, metastable regimes and critical points. David A. Pink*1, Marjorie Ladd-Parada2, Alejandro G. Marangoni3, and Gianfranco Mazzanti4, 1St. Francis Xavier University, Canada; 2University of Stockholm, Sweden; 3University of Guelph, Canada; 4Dalhousie University, Canada

Effects of Shearing and Composition on Lipids Porosity. Farnaz Maleky1, and Brandon Howard*2, 1Ohio State University, USA; 2The Ohio State University, US

Effects of Polymorphs of Seed Crystals on the Crystallization of Coconut Oil. Busakorn Mahisanunt*1, Hironori Hondoh2, and Satoru Ueno3, 1Hiroshima University, Japan; 2University of Shizuoka, Japan; 3Graduate School of Biosphere Science, Hiroshima University, Japan

Functional fat blends of specific mixture systems of saturated-oleic mixed acid triacylglycerols: Impact of molecular compound crystal formation. Kiyotaka Sato*1, and Laura Bayés-García3, 1Hiroshima University, Japan; 2Universitat de Barcelona, Spain

Statistical mass fractals in flocculated foods. Are these useful parameters to measure? Fernanda Peyronel*1, Silvana Martini2, and David A. Pink3, 1Dept. of Food Science, University of Guelph, Canada; 2Utah State University, USA; 3St. Francis Xavier University, Canada

The Effect of Minor Components on the Crystallization Behavior and Microstructure of Cocoa Butter. Jay W. Chen*, Saeed M. Ghazani, and Alejandro G. Marangoni, University of Guelph, Canada

Tuesday Afternoon

EAT 3: Implication of Lipid Structuring in Food Application

Chairs: Nuria Acevedo, Iowa State University, USA; and Elena Dibildox Alvarado, Universidad Autónoma de San Luis Potosí, Mexico

Strucutration and physical properties of mixed-oleogels for commercial shortenings substitution. Ana-Karen Rodríguez-Hernández1, Jaime-David Pérez-Martínez*2, and Jose Alberto Gallegos-Infante3, 1universidad Autonoma de San Luis Potosí, Mexico; 2Lab. Biopolímeros Alimentarios, Facultad de Ciencias Químicas, Universidad Autónoma de San Luis Potosí, Av. Manuel Nava No. 6, 78210, México., Mexico; 3TecNM/ITD, Mexico

Application of palm fractions to increase thermal stability in filling chocolate cake. Maryam Bakhtiari1, Maryam Gharachorloo*2, and Babak Ghiassi Tarzi2, 1MSc Student of the Department of Food Science and Technology, Science and Research Branch, Islamic Azad University, Iran; 2Associate Professor of the Department of Food Science and Technology, Science and Research Branch, Islamic Azad University, Iran
Application and characterization of oleogels based on rapeseed oil for the production of fine bakery products. Madline Schubert, Nelli Erlenbusch, and Bertrand Matthäus, Max Rubner-Institut, Germany; Max-Rubner-Institut, Germany

Conversion of pulse protein-based oleogels into oleofoams for improved bakery application. Athira Mohanan, Michael T. Nickerson, and Supratim Ghosh, University of Saskatchewan, Canada

How multiscale structures in milk fat shape the crystal network formation. Naomi Arita Merino, Elke Scholten, and Hein H.J van Valenberg, Wageningen University, Netherlands; Physics and Physical Chemistry of Foods, Wageningen University, Netherlands; Wageningen University

Incorporation of Bigels into Yogurt to Improve Probiotics Survival. Xiaqing Zhuang, Stephanie Clark, and Nuria C. Acevedo, Iowa State University, USA

Novel cocoa butter equivalents form microalgal butters. Aleandro G. Marangoni, and Saeed M. Ghazani, University of Guelph, Canada

Preparation of Natural Butter Substitute by Enzymatic Interesterification from Palm-based Oils and Its Application in Whipping Cream. Wan Jun Lee, Zhen Zhang, and Yong Wang, Department of Food Science and Engineering, Jinan University, China; South China University of Technology, China; Jinan University, China

The Effect of Minor Components on the Crystallization Behavior and Microstructure of Cocoa Butter. Jay W. Chen, Saeed M. Ghazani, and Aleandro G. Marangoni, University of Guelph, Canada

Microwave treatment increased protein digestibility of pigeon pea (Cajanus cajan) flour: Elucidation of underlying mechanisms. Xiaohong Sun, Ikenna Ohanenye, Tausif Ahmed, and Chibuike C. Udenigwe, University of Ottawa, Canada

Non-Thermal Ultrasound Drying to Enhance the Solubility of Almond, Lentil and Pea Proteins. Nahla Kreidly, and Graciela W. Padua, University of Illinois at Urbana Champaign, USA; University of Illinois, USA

In vitro Antioxidant and Antihypertensive Properties of Edible Cricket (Brachytrupes membranaceus) Protein Derived Membrane Peptide Fractions. Fatima A. Abdulsaalam, Tsav-wu a J.A Gborigo, Rotimi Aluko, and Abraham T. Giring, Department of Food Science, University of Agriculture, Makurdi, Nigeria, Nigeria; College of Education, Katsina-ala, Benue State, Nigeria; University of Manitoba, Canada; Federal University of Agriculture, Makurdi, Nigeria

Proteins from Seafood Processing Discards: Recovery and their Food Applications. V. Venugopalan, Kerala University of Fisheries and Ocean Studies, India

Spent hen muscle protein hydrolysate reduces blood pressure in spontaneously hypertensive rats. Hongbing Fan, and Jianping Wu, University of Alberta, Canada
Solid-state fermentation to prepare proteins and peptides from heat-stabilized defatted rice bran, and antioxidant activity. Ali A. Bisly, Navam S. Hettiarachchy, and Suresh T. Kumar, University of Arkansas, USA; University of Arkansas-Fayetteville, USA

Stability and rheology of canola protein isolate stabilized concentrated oil-in-water emulsions. Supratim Ghosh, and Yan Ran Tang, University of Saskatchewan, Canada

Microencapsulation of Chia seed oil in protein-polysaccharide matrix system: Characterization, oxidative stability and in vitro digestion. Iqra Yasmin, Wahab Ali Khan, and Saima Tehseen, NIFSAT, Pakistan; National Institute of Food Science and Technology, University of Agriculture, Faisalabad, Pakistan; Department of Food Science and Technology, Government College for Women University, Faisalabad, Pakistan

Effect of salts and concentration on the formation of heat-induced pulse protein gels. Burcu Guldiken, and Michael Nickerson, University of Saskatchewan, Canada

Wednesday Morning

EAT 4: Phase Transition and Interfacial Phenomena in Complex Food System
Chairs: Filip Van Bockstaele, Ghent University, Belgium; and Andrew Gravelle, University of Guelph, Canada

Visual observations of mono/diglycerides, polysorbate 80, and milk proteins modulating coalescence between two fat globules. Abbey E. Thiel, and Richard W. Hartel, University of Wisconsin-Madison, USA

Stabilization of food-grade liquid water-in-vegetable oil emulsions by modifying emulsifier interactions at the oil-water interface. Maria F. Romero, Dérick Rousseau, and Supratim Ghosh, Dept. of Food and Bioproduct Sciences, College of Agriculture and Bioresources, University of Saskatchewan, Canada; Ryerson University, Canada; University of Saskatchewan, Canada

Effects of degree of deacetylation and concentration of chitosan on the rheology and functional properties of Citrem-chitosan-stabilized bilayer nanoemulsions. Kunal Kadiya, and Supratim Ghosh, Department of Food and Bioproduct Sciences, University of Saskatchewan, Canada; University of Saskatchewan, Canada

Impact of various physicochemical factors on stability of curcumin in oil-in-water emulsions. Mahesh M. Kharat, and David Julian McClements, University of Massachusetts Amherst, USA; Department of Food Science, University of Massachusetts Amherst

In vitro Digestion of Water-in-oil Emulsions Stabilized with Fat Crystals. Jonathan M. Andrade, Vivekkumar H. Patel, and Dérick Rousseau, Food and Soft Materials Research Group, Department of Chemistry and Biology, Ryerson University, Canada; Ryerson University, Canada

Increasing the Oral Bioaccessibility of Curcumin using Oleogels Structured by Rice Bran Wax. Robert M. Hallinan, Chureeporn Chitchumroonchokchok, and Farnaz Maleky, The Ohio State University, USA; Ohio State University, USA
Development of Emulsifiers from Pea Starches using Octenyl Succinic Anhydride Modification for the Beverage Emulsions. Fan Cheng, Yongfeng Ai, and Supratim Ghosh*, University of Saskatchewan, Canada

Study on Macroscopic Properties, Microstructure and Aggregation Process of Monoglyceride and Vegetable Wax Based Oleofoams. Zong Meng*, Liyang Du, and Yuanfa Liu, School of Food Science and Technology, Jiangnan University, China; Jiangnan University, China; School of Food Science and Technology, State Key Laboratory of Food Science and Technology, Jiangnan University, China

Understanding bubble dynamics in sonicated edible lipids to improve their physicochemical properties. Jack J. Youngs*, Peter Birkin, Tadd Truscott, and Silvana Martini, University of Southampton, United Kingdom; Utah State University, USA

Insights into the Assembly Mechanism of Multi-Component (Ceramide + Lecithin + Water) Oleogels: Influence of Homogenization Temperature. Yaqi Lan*, and Shenglan Guo, Guangdong Key Laboratory of Nutraceutical and Functional Foods, College of Food Science, South China Agricultural University, China; South China Agricultural University, China

Surfactant competition destabilizes particle-stabilized emulsions. Malek El-Aooiti*, Auke de Vries, and Dérick Rousseau, Ryerson University, Canada

Posters will be available for viewing from Sunday at 5:30 p.m. until Wednesday at 10:30 a.m.

Dedicated Poster Sessions with Authors Present
Monday, April 27 5:30–6:30 p.m.
Tuesday, April 28 5:30–6:30 p.m.

EAT-P: Edible Applications Technology Poster Session
Poster Session Chairpersons: Supratim Ghosh, University of Saskatchewan, Canada

Details pending.