Monday Afternoon

**EAT 1: Delivery and Dispersed Systems**

Chairs: D. Rousseau, Ryerson University, Canada; and S. Ghosh, University of Saskatchewan, Canada.

**Microbial Cells as Colloidal Particles: Pickering Oil-in-Water Emulsions Stabilized by Bacteria and Yeast.** H. Firoozmand and D. Rousseau*, Ryerson University, Canada.

**Formation of Edible Filled Hydrogels by Spontaneous Emulsification.** J. Komaiko (Ralph Potts Memorial Fellowship Award Winner) and D.J. McClements, University of Massachusetts Amherst, USA.

**Crystallization of Fats to Control Emulsion Structure for the Manufacture of Bakery Systems.** F. Davoli², D. Karleskind¹, S. Metin², and P. Smith*¹, ¹Cargill, Belgium, ²Cargill, USA.

**CLA-rich Eggs in Mayonnaise: Emulsion Stability and Rheological Properties.** S. Shinn and A. Proctor, University of Arkansas, USA.

**Antioxidant Potential of Some Turkish Olives and Their Corresponding Extra Virgin Olive Oils in Bulk Oil and Oil-in-Water Emulsions.** T.M. Keceli, University of Cukurova, Turkey.

**Oil Diffusivity Through Solid Fat Crystal Networks.** N.L. Green and D. Rousseau, Ryerson University, Canada.

**Effects of Emulsifiers on Crystallization Behavior of Palm-based Blend and Emulsified Systems.** H. Zhang¹, C. Chen¹², Y. Bi¹², and X. Xu¹, ¹Wilmar (Shanghai) Biotechnology R&D Center, China, ²Henan University of Technology, China.

**Effect of Water Content and Interfacial Stabilizer on the Rheological Behavior of a Crystal Network-stabilized Water-in-Oil Emulsion.** R.R. Rafanan and D. Rousseau, Ryerson University, Canada.

**Effect of Oil Concentration, Droplet Size, and Storage Time on the Gelation Behavior of Nanoemulsions.** V. Erramreddy and S. Ghosh*, University of Saskatchewan, Canada.
Tuesday Morning

**EAT 2: Functional Fats with Reduced Saturated Fats**

Chairs: N. Widlak, Consultant, USA; and A. Bedford, Bunge Oils, Inc., USA.

**High Oleic Soybean Oil: Effects of Substituting High Oleic Oils for Other Fats and Oils on Cardiovascular Disease Risk Factors: A Systematic Review.** P.J. Huth¹, V.L. Fulgoni, III², and B. Larson³, ¹PJH Nutritional Science, LLC, USA, ²Nutrition Impact, USA, ³JG Consulting Services, LLC, USA.

**Oleogel in Dairy: Processed Cheese Product.** H. Huang, J.W. Harper, and F. Maleky, Ohio State University, USA.

**Key Physical and Microstructural Properties Underlying Roll-in Shortening Functionality.** B. Macias-Rodriguez and A.G. Marangoni, University of Guelph, Canada.

**Synergistic Enhancement of Ethylcellulose Oleogels for Fat Replacement.** A.J. Gravelle, M. Davidovich-Pinhas, S. Barbut, and A.G. Marangoni, University of Guelph, Canada.

**Oil Binding Capacity of Palm Oil Based Structural Fat in Reduced Saturated Fatty Acids Blends for Margarine and Spreads.** S. Kanagaratnam¹,², M. Mat Sahn¹, M.E. Hoque², and A. Spowage², ¹Malaysian Palm Oil Board, Malaysia, ²University of Nottingham Malaysia Campus, Malaysia.


**Commercial Factors for Considering Alternative Fats.** N. Widlak, Consultant, USA.

Tuesday Afternoon

**EAT 3: Structuring Edible Oils—The Future of Lipid Gels**

Chairs: M.A. Rogers, University of Guelph, Canada; J. Komaiko, University of Massachusetts Amherst, USA.

**Water Binding Capacity of Rice Bran Wax as an Organogelator.** E. Cramer, D. Heldman, and F. Maleky, Ohio State University, USA.

**Molecular Gels Based on Stratum Corneum Lipids.** M.A. Rogers (AOCS Young Scientist Research Award Winner), University of Guelph, Canada.

**Rheological Properties of Organogels of 12-Hydroxystearic Acid, (R)-12-hydroxyoctadecanamide (HOA), and N-Octadecyl-12-Hydroxyoctadecanamide Developed**

Closing in on the Ability to Predict New Food Grade Gelators. Y. Lan¹ and M.A. Rogers², Rutgers University, USA, University of Guelph, Canada.


Organogelators as Fat Replacement in Cream Cheese Products. M. Limbaugh, W.J. Harper, and F. Maleky, Ohio State University, USA.

The Effects of Shear and Cooling Rate on the Oil Binding Capacity of Wax Oleogels. A.I.E. Blake and A.G. Marangoni, University of Guelph, Canada.

Wednesday Morning

EAT 4: trans Lipids: Solutions and Regulation
Chairs: V.P. Jain, Bunge North America, Inc., USA; and M. Willson, LipoLogic Consultancy LLC, USA.


trans Fats Solution: Novel Approach Using Palm Oil. N.L. Habi Mat Dian¹², M. Mat Sahri¹, L. Oi Ming², and T. Chin Ping². ¹Malaysian Palm Oil Board, Malaysia, ²Universiti Putra Malaysia, Malaysia.

Oil Stabilization in Peanut Butter Using Food Grade Polymers in Order to Replace Hydrogenated Vegetable Oil. R. Tanti, S. Barbut, and A.G. Marangoni, University of Guelph, Canada.


trans/PH Fat—Challenges and Approaches to Eliminate It. G. Yang and G. Cherian, Kellogg NA, USA.

Palm Oil as a Versatile Alternative to Partially Hydrogenated Vegetable Oil. G.P. McNeill, Loders Croklaan, USA.
The Role Soybean Oil has Played in Low trans Solutions. M. Peitz, ADM Oils, USA.

Enrichment of Yogurt with Stearidonic Acid Soybean Oil in Complex Coacervates Modified for Enhanced Stability. E.A. Ifeduba (Edible Applications Technology Division Student Award of Excellence Winner) and C.C. Akoh, University of Georgia, USA.

Conjugated Linoleic Acid (CLA): 30-year Research. Y. Park (Timothy L. Mounts Award Winner), University of Massachusetts Amherst, USA.

EAT 4.1/AM 2: Imaging Fat Crystal Networks at Different Length Scales
Chairs: G. Sekosan, Bunge North America, Inc., USA; and K. Koch, North Dakota State University, USA

Crystallization Behavior of Molecular Compound in the Binary System of 1,3-dioleoyl-2-palmitoyl-sn-glycerol and 1,3-dipalmitoyl-2-oleoyl-sn-glycerol. K. Nakanishi¹, Y. Mikiya¹, T. Ishiguro¹, M. Sato², and S. Ueno³, ¹Miyoshi Oil & Fat Co., Ltd., Japan, ²Japan Synchrotron Radiation Research Institute, Japan, ³Hiroshima University, Japan.

Unpredictable Binary Systems of Triacylglycerols. P.K. Batchu¹,², P.D. Wentzell¹, and G. Mazzanti*¹,², ¹Dalhousie University, Canada, ²Institute for Research in Materials, Canada.

The Effects of Emulsifiers on the Formation and Morphology of Crystal Spheroids. T. Tran, A. Lim, and D. Rousseau, Ryerson University, Canada.

Semi-empirical Treatment of Anomalous Moisture Transport into Sheared Lipids Using Magnetic Resonance Imaging. S. Paluri, M. Shavezipur, A. Abduljalil, D. Heldman, and F. Maleky, Ohio State University, USA.

Modelling the Effects of Shear on Solid Fats Aggregation in Edible Oils. B. Townsend¹, B. Quinn², A. MacDonald³, T. Gordon⁴, C. Hanna⁴, A.G. Marangoni¹, and D.A. Pink²,¹, ¹University of Guelph, Canada, ²St. Francis Xavier University, Canada, ³OneZero Software, Canada, ⁴Boise State University, USA.

Self-organizing Aggregation in Complex Edible Oils. D.A. Pink¹,², B. Quinn¹, F. Peyronel², and A.G. Marangoni², ¹St. Francis Xavier University, Canada, ²University of Guelph, Canada.

Effect of High Intensity Ultrasound on the Crystallization Behavior of Palm Oil in a Flow Cell. Y. Ye and S. Martini*, Utah State University, USA.

Colloidal Inorganic Particle-based Edible Oleogels and Bigels. A. Patel, B. Mankoc, and K. Dewettinck, Ghent University, Belgium.

Thermodynamic Estimates of Solid Fat Content. L. Rong¹,³, A.G. Marangoni², and G. Mazzanti¹,³, ¹Dalhousie University, Canada, ²University of Guelph, Canada, ³Institute for Research in Materials, Canada.
Refined Concepts on the Structures of Liquid Triacylglycerols. G. Mazzanti1,2, L. Lin1, R. Sanderson1,2, O. Qatami1,2, and D.A. Pink3, 1Dalhousie University, Canada, 2Institute for Research in Materials, Canada, 3St. Francis Xavier University, Canada.

Wednesday Afternoon

EAT 5: Confectionary Fats and Oils
Chairs: K. Sato, Hiroshima University, Japan; and A.G. Marangoni, University of Guelph, Canada

Effects of Thermal Treatments on the Polymorphic Behavior of Confectionery Fats: From Pure Components to End Products. L. Bayés-García1, T. Calvet1, M.A. Cuevas-Diarte1, E. Rovira2, K. Sato3, and S. Ueno3, 1University of Barcelona, Spain, 2Enric Rovira S.L., Spain, 3Hiroshima University, Japan.


Quantifying Aggregation of Triacylglycerol Systems, in situ, from Angstroms to Micrometers in One Shot. F. Peyronel1 (Honored Student and The Peter and Clare Kalustian Award Winner), A.G. Marangoni1, and D.A. Pink2, 1University of Guelph, Canada, 2St. Francis Xavier University, Canada.

Dynamic of Mass Transportation Inside Structured Lipid Systems. F. Maleky, Ohio State University, USA.


Boundaries of the Memory Effect in Pure Triacylglycerols. Y. Wang1, O. Qatami1,2, and G. Mazzanti1,2, 1Dalhousie University, Canada, 2Institute for Research in Materials, Canada.

Thermodynamic and Polymorphic Study on Phase Behavior of Ternary Mixture of SOS/SSO/OSO for Application to Confectionery Fats. S. Watanabe1, K. Shiozaki1, M. Togashi2, M. Sato2, and K. Sato3, 1Oil and Fat Development Department, Japan, 2Chocolate Development Department, Japan, 3Hiroshima University, Japan.

EAT 5.1/S&D 5.1: Emulsions and Foams
Chairs: T. Tokle, Kalsec, USA; and E.J. Acosta, University of Toronto, Canada

Enhancing the Bioavailability of Lipophilic Nutraceuticals in Fruits and Vegetables: Excipient Food Design. D.J. McClements1,2, 1University of Massachusetts Amherst, USA, 2King Abdulaziz University, Saudi Arabia.
Beverage Emulsions. Y. Fang, PepsiCo Research and Development, USA.

Emulsions Stabilized by Edible Colloidal Particles. C.C. Berton-Carabin and K. Schroën, Wageningen University, The Netherlands.

HLD-NAC Guided Formulation of Self Micro Emulsifying Delivery System (SMEDS). M. Nouraei and E.J. Acosta, University of Toronto, Canada.


Methods to Predict Emulsion Formation and Stability: A Map to the Land of Emulsions. E.J. Acosta, University of Toronto, Canada.

Sunday Through Wednesday Viewing

EAT-P: Edible Applications Technology Poster Session
Chairs: M.A. Rogers, University of Guelph, Canada; and F. Maleky, Ohio State University, USA

Effect of Aqueous Phase Composition on Particle Size and Stability of Sunflower Oil/Sodium Caseinate Nanoemulsions. J.M. Montes de Oca Avalos¹, R.J. Candal², and M.L. Herrera*, ¹Instituto de Tecnología en Polímeros y Nanotecnología, Argentina, ²Instituto de Investigacion e Ingenieria Ambiental, Argentina.


Amylose Inclusion Complexation of Ferulic Acid via Lipophilization. J.A. Kenar, D. Compton, F.C. Felker, and G.F. Fanta, USDA, ARS, USA.

Submicron Emulsions Designed to Stabilize Blueberry Extract in Foods. K. Latorre¹, P. Cabral², and A. Medrano*, ¹Universidad de la República (Udelar), Uruguay, ²Nuclear Research Center, Uruguay.

Changes in Lipid Substances in Rice During Grain Development. N.H. Kim¹, J. Kwak², J.Y. Baik¹, M. Yoon³, J. Lee², S.W. Yoon¹, and I.H. Kim¹, ¹Korea University, Republic of Korea, ²Rural Development Administration, Republic of Korea.


Influence of Solvents on Extractability of Lipids from *Gloeotheca* sp., and Effects on Antioxidant Capacity. H.M. Amaro, A.C. Guedes, I. Sousa-Pinto, and F.X. Malcata*, University of Porto, Portugal.

Inhibiting Nucleation and Crystal Growth of High Melting Point Lipids in Cooking Oil. J. Neddersen¹, B. Forrest², and M. Nielsen³, ¹DuPont Nutrition & Health, USA, ²DuPont Nutrition & Health, Australia, ³DuPont NHIB, Denmark.

Development of Zero *trans*/Low Sat Fat Systems, Structured with Sorbitan Monostearate and Fully Hydrogenated Crambe Oil. G.R. Comote, T.G. Kieckbusch, and G.M. Oliveira*, University of Campinas, Brazil.

Effect of Aqueous Phase Composition on the Physicochemical Stability of Chia O/W Emulsions. L.M. Julio¹, V.Y. Ixtaina¹, J.R. Wagner³, S.M. Nolasco², and M.C. Tomás*-¹, ¹Centro de Investigación y Desarrollo en Criotecnología de Alimentos (CIDCA) (CONICET La Plata-UNLP), Argentina, ²Universidad Nacional del Centro de la Pcia. de Bs. As., Argentina, ³Universidad Nacional de Quilmes (UNQ), Argentina.

Effects of High Pressure Treatment on Structure and Physical Properties of Fat Blends of Fully Hydrogenated Soybean Oil. M. Zulkurnain, F. Maleky, and B. Balasubramaniam, Ohio State University, USA.

*In vitro* Digestion of Interesterified Stearic Acid-rich Blends: Compositional and Physical Property Investigations During Digestion. S.H. Thilakaratna¹, M.A. Rogers¹, Y. Lan², S. Huynh¹, and A.J. Wright¹, ¹University of Guelph, Canada, ²Rutgers University, USA.

The Effects of Applesauce and Pectin on the *in vitro* Digestive Stability, Digestibility, and Bioaccessibility of a DHA-rich Algal Oil Emulsion. X. Lin and A.J. Wright, University of Guelph, Canada.

Physical and Oxidative Stability of Fish Oil Nanoemulsions Produced by Spontaneous Emulsification. R. Walker¹, E.A. Decker¹,², and D.J. McClements¹,², ¹University of Massachusetts Amherst, USA, ²King Abdulaziz University, Saudi Arabia.

*In vitro* Digestibility and β-carotene Release from Ethylcellulose Oleogels. C. O'Sullivan¹, M. Davidovich-Pinhas², A.J. Wright¹, and A.G. Marangoni¹, ¹University of Guelph, Canada, ²Technion, Israel.

Effect of *trans, trans* CLA Egg Enrichment from CLA-rich Soy Oil on Yolk Fatty Acid Composition, Viscosity, and Physical Properties. S. Shinn, A. Proctor, N. Anthony, and A. Gilley, University of Arkansas, USA.


Structuring Emulsions W/O with Palm Hardfat and Soy Lecithin. V.S. Santos, C.C. Ming, and L.A.G Gonçalves, University of Campinas, Brazil.


Biophysical Aspects of Lipid Digestion in Human Breast Milk and Similac™ Infant Formulas. F. AlHasawi¹ and M.A. Rogers², ¹Rutgers University, USA, ²University of Guelph, Canada.

Modification of Physical Properties of Palm-based Diacylglycerol Oil. C.P. Tan¹, S.P. Ng¹, and I.A. Nehdi², ¹Universiti Putra Malaysia, Malaysia, ²King Saud University, Saudi Arabia.

Modeling Oil Diffusion Process in Fat Crystal Network. H. Wang and F. Maleky, Ohio State University, USA.

Chemical and Enzymatic Transesterification of High Oleic Algae Oil, High Oleic Sunflower Oil, Shea Stearin with Palm Stearin, and Fully Hydrogenated Cottonseed Oil to Synthesize Cocoa Butter Equivalents. S. Mirzaee Ghazani¹, C. O'Sullivan¹, R. Bond², W. Rakitsky², and A.G. Marangoni¹, ¹University of Guelph, Canada, ²Solazyme Inc., USA.


Effect of High Intensity Ultrasound (HIU) on the Crystallization Behavior of Interesterified and Physical Blends of High Oleic Sunflower Oil (HOSO) and Tripalmitin. J. Kadamne¹, E.A. Ifeduba², C.C. Akoh², and S. Martini¹, ¹Utah State University, USA, ²University of Georgia, USA.

Rheology and Phase behavior of Binary Wax Blends in Soybean Oil. S. Jana and S. Martini, Utah State University, USA.


Physical Characteristics of Peanut Butter Influenced by Fully Hydrogenated Flixweed Oil Descurainia sophia (L.) as a Stabilizer. L. Ahmadi, X. Gao, and J. Vandermey, Brescia University College at Western University, Canada.

Development of Functional Beverages from Blends of *Hibiscus sabdariffa* Extract and Selected Fruit Juices for Optimal Antioxidant Properties. O.M. Ogundele¹, O.O. Awolu¹, A.A. Badejo¹, T.N. Fagbemi*¹,², and I.D. Nwachukwu², ¹Federal University of Technology, Nigeria, ²University of Manitoba, Canada.

Effect of the Stearic Sucrose Ester S-170 on Physical Properties of High Stearic High Oleic Sunflower Oil Stearins. J.A. Rincon-Cardona¹,², R.J. Candal², and M.L. Herrera¹, ¹Instituto de Tecnologia en Polímeros y Nanotecnología, Argentina, ²Instituto de Investigacion e Ingenieria Ambiental, Argentina.

Cocoa Butter Alternative from Rice Bran Oil by Enzymatic Acidolysis. P. Kosiyanant², G. Pande¹, W. Tungjaroenchai², and C.C. Akoh¹, ¹University of Georgia, USA, ²King Mongut's Institute of Technology, Thailand.

CLA-rich Soy Oil Shortening Production and Characterization. S.E. Mayfield¹, A. Patel², A. Proctor¹, K. Dewettinck², and D. Van de Walle², ¹University of Arkansas, USA, ²University of Gent, Belgium.

Cyanogenic Glycosides and Secoisolariciresinol Diglucoside in Flaxseed Meal Fortified Gluten-free Bread. R. Boonen¹,², J. Liu³, Y.Y. Shim¹,³, C.M. Olivia*¹, and M.J.T. Reaney¹,³,⁴, ¹Prairie Tide Chemicals Inc., Canada, ²Wageningen University, The Netherlands, ³University of Saskatchewan, Canada, ⁴Jinan University, China.

The presenter is the first author or otherwise indicated with an asterisk (*).