

# 2022 AOCS Annual Meeting & Expo

## Edible Applications Technology Program

*As of March 1, 2022. Subject to change.*

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### General Edible Applications Technology

#### EDIBLE APPLICATIONS TECHNOLOGY

*Chairs: Supratim Ghosh, University of Saskatchewan, Canada; and Filip Van Bockstaele, Ghent University, Belgium*

Monday, May 2, 2022 | 9:55 a.m.—Noon EDT (Atlanta, USA; UTC-4)

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**Tuning plant protein for improved functionality and flavor profile: From field to application.** Jiajia Rao\*, *North Dakota State University, United States (AOCS Young Scientist Research Award Winner)*

**Incorporating heterogeneous stress translation in a fractal structural-mechanical theory of particle-filled colloidal networks.** Andrew J. Gravelle\*<sup>1</sup>, Alejandro G. Marangoni<sup>2</sup>, <sup>1</sup>*Food Science and Technology, University of California, Davis, United States;* <sup>2</sup>*Food Science Department, University of Guelph, Canada*

**Attrition of fully hydrogenated soybean oil-coated micronutrient granules during mixing.** Kiki Chan\*, Gladys Olubowale, Yu-Ling Cheng, Levente Diosady, *Chemical Engineering and Applied Chemistry, University of Toronto, Canada*

**The physicochemical and sensory characteristics of yoghurt fortified with encapsulated fish oil/milkfat.** Mitra Nosratpour\*<sup>1</sup>, Yong Wang<sup>2</sup>, Jisheng Ma<sup>3</sup>, Victoria Haritos<sup>4</sup>, Cordelia Selomulya<sup>2</sup>, <sup>1</sup>*Chemical Engineering, Monash University/Riverina oils and Bio energy, Australia;* <sup>2</sup>*School of Chemical Engineering, UNSW, Australia;* <sup>3</sup>*Monash X-Ray Platform, Monash University, Australia;* <sup>4</sup>*Chemical Engineering, Monash University, Australia*

**Enhancing the quality of fried food and frying oil by adjusting the frying processing.** Junmei Liang\*, Fuhuan Niu, Lingling Wei, Yuanrong Jiang, *Wilmar Global R&D Center, China (People's Republic)*

## Fat Crystallization I—Microstructure and Polymorphic Transition

EDIBLE APPLICATIONS TECHNOLOGY

*Chairs: Alejandro Marangoni, University of Guelph, Canada; and Eckhard Flöter, Technical University Berlin, Germany*

Monday, May 2, 2022 | 1:25–3:30 p.m. EDT (Atlanta, USA; UTC-4)

*The Fat Crystallization sessions feature talks concerning cupuassu fat; oil binding capacity and oil loss; examples of x-ray scattering; the filterability of oil slurries; Monte carlo simulations and comparison with x-ray scattering; TAG molecular composition; semi-liquid shortenings; alkyl chains in crystals; and isotropic liquid state of triacylglycerols.*

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**Effects of processing conditions and emulsifiers addition of crystallization kinetics and polymorphism of cupuassu fat and its fractions.** Maria Lidia Herrera\*<sup>1</sup> (**Timothy L. Mounts Award Winner**), Maria R. Ramos<sup>1</sup>, Victor Alonso Garcia Londoño<sup>1</sup>, Karina Dafne Martinez<sup>1</sup>, Maria Jose Rodríguez Batiller<sup>1</sup>, Virginia Borroni<sup>1</sup>, Roberto Candal<sup>2</sup>; <sup>1</sup>*Institute of Polymer Technology and Nanotechnology, University of Buenos Aires-CONICET, Argentina;* <sup>2</sup>*Institute of Research and Environmental Engineering, University of San Martin, Argentina*

**Relationship between oil binding capacity, oil loss, and the physical properties of an interesterified palm-based fat—influence of high-intensity ultrasound, cooling rate, and saturation level.** Melissa Marsh\* (**Thomas H. Smouse Memorial Fellowship Winner**), Silvana Martini, *Utah State University, United States*

**Filterability of oil slurries as a function of particle-size distribution.** Jeppe Hjorth\*, *Product and Technology Development, AAK Denmark AS, Denmark*

**Microstructure development in semi-liquid shortenings upon storage.** Kato Rondou\*, *UGent, Belgium*

**Relating polymorphic transition and triglyceride composition.** Julia Seilert\*, Eckhard Flöter, *Food Process Engineering, Technical University of Berlin, Germany*

## Fat Crystallization II—Solid-state Structure

EDIBLE APPLICATIONS TECHNOLOGY

*Chairs: Alejandro Marangoni, University of Guelph, Canada; and Eckhard Flöter, Technical University Berlin, Germany*

Monday, May 2, 2022 | 3:55–6 p.m. EDT (Atlanta, USA; UTC-4)

*The Fat Crystallization sessions feature talks concerning cupuassu fat; oil binding capacity and oil loss; examples of x-ray scattering; the filterability of oil slurries; Monte carlo simulations and comparison with x-ray scattering; TAG molecular composition; semi-liquid shortenings; alkyl chains in crystals; and isotropic liquid state of triacylglycerols.*

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**Exploring lipid structure and phases with x-ray scattering.** Scott Barton\*, *Xenocs Inc., United States*

**Isotropic liquid state of triacylglycerols: The starting point of fats and oils crystallization.** Daniel Golodnizky\*<sup>1</sup>, Yulia Shmidov<sup>2</sup>, Ronit Bitton<sup>3</sup>, Carlos E. S. Bernardes<sup>4</sup>, Maya Davidovich-Pinhas<sup>5</sup>, <sup>1</sup>*Biotechnology and Food Engineering, Technion Israel Institute of Technology, Israel;* <sup>2</sup>*Duke University, Israel;* <sup>3</sup>*Ben-Gurion University of the Negev, Israel;* <sup>4</sup>*Faculdade de Ciências Universidade de Lisboa, Portugal;* <sup>5</sup>*Technion Israel Institute of Technology, Israel*

**USAXS and SAXS data: Their interpretation and the organization of alkyl chains in crystals.** Fernanda Peyrone<sup>1\*</sup>, David A. Pink<sup>2</sup>, Joseph Cooney<sup>3</sup>, Silvana Martini<sup>3</sup>, <sup>1</sup>*Food Science, University of Guelph, Canada*; <sup>2</sup>*Physics/Food Science, St. Francis Xavier University/University of Guelph, Canada*; <sup>3</sup>*Utah State University, United States*

**Molecular structures of triacontane, stearic acid and behenyl lignocerate crystals: Monte Carlo simulations and comparison with x-ray scattering.** David A. Pink<sup>1</sup>, Joseph Cooney<sup>2\*</sup>, Fernanda Peyrone<sup>3</sup>, Silvana Martini<sup>4</sup>, <sup>1</sup>*Physics/Food Science, St. Francis Xavier University/University of Guelph, Canada*; <sup>2</sup>*Department of Nutrition, Dietetics and Food Sciences, Utah State University, United States*; <sup>3</sup>*Food Science, University of Guelph, Canada*; <sup>4</sup>*Utah State University, United States*

## Novel Edible Application of Food Proteins

EDIBLE APPLICATIONS TECHNOLOGY

Joint session with the Protein and Co-Products Division

*Chairs: Pulari Krishnankutty Nair, Danone North America, USA; and Serpil Metin, Cargill Inc, USA*

Monday, May 2, 2022 | 3:55–6 p.m. EDT (Atlanta, USA; UTC-4)

*The Novel Edible Application of Food Proteins session features the impact of cold plasma on protein structural and functional characteristics; replacing animal fat with faba bean emulsions; physicochemical properties of buckwheat albumin; and the use of pea proteins as emulsifiers in beverages.*

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**Plant protein functionalization: Exploring cold plasma.** Pam Ismail\*, *Department of Food Science and Nutrition, University of Minnesota, United States*

**Physicochemical properties of buckwheat albumin.** Rio Ogawa<sup>1\*</sup>, Kazumi Ninomiya<sup>2</sup>, Yusuke Yamaguchi<sup>1</sup>, Hitoshi Kumagai<sup>2</sup>, Hitomi Kumagai<sup>1</sup>, <sup>1</sup>*Bioresource Sciences, Nihon University, Japan*; <sup>2</sup>*Food Science and Nutrition, Kyoritsu Women's University, Japan*

**Utilization of mildly fractionated pea proteins for the development of heat-stable beverage emulsions.** Neksha Devaki\*, Supratim Ghosh, *University of Saskatchewan, Canada*

**Utilization of faba bean protein-stabilized structured emulsions in the replacement of animal fat in beef burgers.** Breann Squires<sup>1</sup>, Oluwafemi J. Coker<sup>2</sup>, Phyllis J. Shand<sup>2</sup>, Supratim Ghosh<sup>1\*</sup>, <sup>1</sup>*University of Saskatchewan, Canada*; <sup>2</sup>*Department of Food & Bioproduct Sciences, University of Saskatchewan, Canada*

**Panel discussion**

## Implications of Lipids Structuring in Food Applications I

EDIBLE APPLICATIONS TECHNOLOGY

*Chairs: Nuria Acevedo, Iowa State University, USA; and Sabine Danthine, University of Liege, Belgium*

Tuesday, May 3, 2022 | 7:25–9:30 a.m. EDT (Atlanta, USA; UTC-4)

*The Implications of Lipids Structuring in Food Applications sessions highlight fat structuring; replacing semi-solid fats; developing gels from algal oils; candelilla wax, carnauba wax and beeswax emulsions; and wax-based oleogels.*

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**Fat structuring in confectionery applications: Evaluation of raw materials and its impact on processing and functionality.** Miguel Bootello<sup>1\*</sup>, Jeanine Werleman<sup>2</sup>, Imro Zand<sup>2</sup>, <sup>1</sup>*Bunge Loders Croklaan, Spain*; <sup>2</sup>*Bunge Loders Croklaan, Netherlands*

**Properties of wax-hempseed oil oleogels and their use for margarines.** Hong-Sik Hwang\*<sup>1</sup>, Sanghoon Kim<sup>1</sup>, Jill Winkler-Moser<sup>1</sup>, Suyong Lee<sup>2</sup>, Sean Liu<sup>1</sup>, <sup>1</sup>USDA ARS NCAUR, United States; <sup>2</sup>Sejong University, United States

**Characterization of the mechanical properties, freeze-thaw stability, and oxidative stability of edible, high-lipid rice bran wax-gelatin biphasic gels.** Nuria Acevedo<sup>1</sup>, Rodrigo Tarté<sup>2</sup>, Karin Cho\*<sup>3</sup>, <sup>1</sup>Griffith Foods, United States; <sup>2</sup>Meat Science, Iowa State University, United States; <sup>3</sup>Food Science and Human Nutrition, Iowa State University, United States

**Study of microstructure entropy to optimize wax-based oleogel production technology.** Varuzhan Sarkisyan\*, Roman Sobolev, Yuliya Frolova, Alla Kochetkova, Federal Research Center of Nutrition, Biotechnology and Food Safety, Russia

## Implications of Lipids Structuring in Food Applications II

EDIBLE APPLICATIONS TECHNOLOGY

Chairs: Nuria Acevedo, Iowa State University, USA; and Sabine Danthine, University of Liege, Belgium  
Tuesday, May 3, 2022 | 9:55–Noon EDT (Atlanta, USA; UTC-4)

*The Implications of Lipids Structuring in Food Applications sessions highlight fat structuring; replacing semi-solid fats; developing gels from algal oils; candelilla wax, carnauba wax and beeswax emulsions; and wax-based oleogels.*

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**Characterization and comparison of oleogels and emulgels prepared from *Schizochytrium* algal oil using monolaurin and MAG/DAG as gelators.** Joseph Hyatt\*, Siyu Zhang, Casimir Akoh, Food Science and Technology, University of Georgia, United States

**Crystallization of wax esters—a prerequisite to understand wax-based oleogels.** Henriette Brykczynski\*<sup>1</sup>, Eckhard Flöter<sup>2</sup>, <sup>1</sup>Technical University Berlin, Germany; <sup>2</sup>Food Process Engineering, Technical University of Berlin, Germany

**Structured water-in-oil emulsions developed with candelilla wax.** Jorge F. Toro-Vazquez\*<sup>1</sup>, Anaid De la Peña-Gil<sup>1</sup>, Miriam A. Charó-Alonso<sup>1</sup>, David Pérez-Martinez<sup>2</sup>, <sup>1</sup>Food Physicochemistry, UASLP-FCQ, Mexico; <sup>2</sup>UASLP-FCQ, United States

**Carnauba wax and beeswax as structuring agents for surfactant-free water-in-oleogels emulsions.** Ivana A. Penagos\*<sup>1</sup>, Juan S. Murillo Moreno<sup>2</sup>, Koen Dewettinck<sup>2</sup>, Filip Van Bockstaele<sup>2</sup>, <sup>1</sup>Food Structure & Function Research Group, Ghent University, Belgium; <sup>2</sup>Department of Food Technology, Safety and Health, Ghent University, Belgium

## Phase Transitions and Interfacial Phenomena in Complex Food Systems

EDIBLE APPLICATIONS TECHNOLOGY

Chairs: Andrew Gravelle, University of California, Davis, USA; and Reed Nicholson, Motif FoodWorks, Inc., USA

Tuesday, May 3, 2022 | 1:25–3:30 p.m. EDT (Atlanta, USA; UTC-4)

*The Phase Transitions and Interfacial Phenomena in Complex Food Systems session includes the design of bigels; oleofoams for food; diacylglycerol-based SLNs and Pickering W/O emulsions; and oil-in-water bilayer nanoemulsions.*

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**From molecular assemblies to nutritious food products.** Maya Davidovich-Pinhas\*, Technion—Israel Institute of Technology, Israel

**Role of interfacial compositions in achieving dispersed phase-induced gelation and controlled digestion of oil-in-water bilayer nanoemulsions.** Kunal Kadiya\*<sup>1</sup>, Supratim Ghosh<sup>2</sup>, <sup>1</sup>*Department of Food and Bioproduct Sciences, University of Saskatchewan, Canada*

**Tailored rigidity of W/O Pickering emulsions using diacylglycerol-based surface-active solid lipid nanoparticles.** Yong Wang\*, Chaoying Qiu<sup>1</sup>, Guoyan Li, *Jinan University, China (People's Republic)*

**Edible oleofoams stabilized by fatty acid and fatty alcohol crystalline particles.** Anne-Laure Fameau\*, *INRAE, France*

**Fabrication and characterization of oleofoams composed of the edible oils and tribehenoyl-glycerol: Towards stable and higher air content colloidal system.** Kazuki Matsuo\*<sup>1</sup>, Satoru Ueno<sup>2</sup>, <sup>1</sup>*POLA Chemical Industries, Inc., Japan; <sup>2</sup>Hiroshima University, Japan*

## Surfactants in Food

EDIBLE APPLICATIONS TECHNOLOGY

Joint session with the Surfactants and Detergents Division

*Chairs: Pulari Krishnankutty Nair, Danone North America, USA; and Kaustuv Bhattacharya, IFF, Denmark*

Tuesday, May 3, 2022 | 3:55–6 p.m. EDT (Atlanta, USA; UTC-4)

*The Surfactants in Food session includes research on the transport of lipid oxidation intermediates; food-grade lecithin microemulsions for oil extraction; local distribution of limonene in phospholipid vesicles; and understanding the reactivity of sucralose versus sucrose using lipase catalyzed trans-esterification.*

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**Local distribution of limonene in phospholipid vesicles.** Ann-Dorie Webley\*<sup>1</sup>, Stephanie Dungan<sup>1</sup>, Susan Ebeler<sup>3</sup>, <sup>1</sup>*Food Science and Technology, University of California Davis, United States; <sup>3</sup>Viticulture and Enology, University of California Davis, United States*

**Transport of lipid oxidation intermediates and its impact on the lipid oxidation rate in a model food emulsion.** Sten ten Klooster\*<sup>1</sup> (*Edible Applications Technology Division Student Award*), Karin Schroën<sup>1</sup>, Claire Berton-Carabin<sup>2</sup>, <sup>1</sup>*Food Process Engineering, Wageningen University, Netherlands, <sup>2</sup>INRAE Nantes, France*

**Extraction of clove oil via solvent-enhanced capillary displacement.** Carol Tan\*, Edgar Acosta  
*Chemical Engineering and Applied Chemistry, University of Toronto, Canada*

**Sucralose hydrogels: Peering into the reactivity of sucralose versus sucrose using lipase catalyzed trans-esterification.** George John\*<sup>1</sup>, Malick Samateh<sup>1</sup>, Siddharth Marwaha<sup>2</sup>, Jose James<sup>2</sup>, Vikas Nanda<sup>2</sup>, <sup>1</sup>*Chemistry and Biochemistry, City College of New York (CUNY), United States; <sup>2</sup>Biochemistry, Rutgers University, United States*

### Panel discussion

## Interactions Between Lipids and Other Ingredients in Plant-based Products

EDIBLE APPLICATIONS TECHNOLOGY

*Chairs: Karel Hrnčirik, Upfield, Netherlands; and Zong Meng, Jiangnan University, China*

Wednesday, May 4, 2022 | 7:25–9:30 a.m. EDT (Atlanta, USA; UTC-4)

*This session covers oil structuring to replace trans and saturated fats; detecting thiol moieties; healthy alternatives to solid fats; and crosslinking gelatin with tannic acid.*

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**Polysaccharide microgel particles-dominated Pickering emulsion gels for oil structuring: Formation, interfacial layer construction, and physical properties.** Zong Meng\*, Qinbo Jiang, *School of Food Science and Technology, Jiangnan University, China (People's Republic)*

**Development and characterization of a novel, edible oleocolloid made of rice bran wax oleogel and sodium alginate-kappa-carrageenan hydrogel.** Julia Nutter\*<sup>1</sup>, Xiaolei Shi<sup>1</sup>, Nuria Acevedo<sup>2</sup>, <sup>1</sup>*Food Science and Human Nutrition, Iowa State University, United States*; <sup>2</sup>*Griffith Foods, United States*

**Spontaneous aggregation of glutathione in aqueous solutions and the use of Ellman's procedure to detect thiol moieties.** Shajahan G. Razul\*<sup>1</sup>, Gurpreet Matharoo<sup>2</sup>, Iris Joye<sup>3</sup>, Wei Cao<sup>3</sup>, Erzsebet Szabo<sup>4</sup>, David A. Pink<sup>5</sup>, <sup>1</sup>*Chemistry, St. Francis Xavier University, Canada*; <sup>2</sup>*ACENET/Physics Dept., Compute Canada/ACENET, Canada*; <sup>3</sup>*Food Science, University of Guelph, Canada*; <sup>4</sup>*Physics, St. Francis Xavier University, Canada*; <sup>5</sup>*Physics/Food Science, St. Francis Xavier University/University of Guelph, Canada*

**Effect of crosslinking gelatin with tannic acid on the mechanical and thermal properties of gelatin—beeswax biphasic gel.** Ariana Saffold\*<sup>1</sup>, Nuria Acevedo<sup>2</sup>, <sup>1</sup>*Food Science and Human Nutrition, Iowa State University, United States*; <sup>2</sup>*Griffith Foods, United States*

#### Panel discussion

### Edible Applications Technology Poster Session

*Chair: Supratim Ghosh, University of Saskatchewan, Canada*

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**Effect of the Fat Content of Cream on the Physical Properties of Butter.** Annalisa Jones\*, Silvana Martini, *Utah State University, United States*

**Plant-based adipose tissue developed using advanced emulsion technology: Comparison of soy-based high internal phase emulsions with beef adipose tissue.** Xiaoyan Hu\*, David J. McClements, *Food Science, University of Massachusetts Amherst, United States*

**Monoglyceride type and concentration affect the rheological and structural properties of Pickering stabilized oleofoams.** Matteo Grossi\*, Bingcan Chen, *Plant Science, North Dakota State University, United States*

**Destabilization of particle-stabilized emulsions with non-ionic surfactants.** Malek El-Aooiti\*<sup>1</sup>, Auke de Vries<sup>2</sup>, D errick Rousseau<sup>1</sup>, <sup>1</sup>*Chemistry and Biology, Ryerson University, Canada*; <sup>2</sup>*Ryerson University, Canada*,

**Animal fat replacement with faba bean protein-stabilized oil-in-water emulsion gels in hybrid bologna formulations.** Fatemeh Keivaninahr<sup>1</sup>, Oluwafemi J. Coker\*<sup>1</sup>, Phyllis J. Shand<sup>1</sup>, Supratim Ghosh<sup>2</sup>, <sup>1</sup>*Department of Food and Bioproduct Sciences, University of Saskatchewan, Canada* <sup>2</sup>*University of Saskatchewan, Canada*

**Microstructure controlling on the printability of high oil paste formulated with nanoporous starch aerogels (NSAs).** Lingyi Liu\* (*Honored Student Award Winner; Manuchehr Eijadi Award Winner*), Ozan Ciftci, *Food Science and Technology, University of Nebraska–Lincoln, United States*

**Improving the consistency of high internal phase water-in-oil emulsions stabilized by fat crystals**



Natalia Mello\*<sup>1</sup>, D errick Rousseau<sup>2</sup>, <sup>1</sup>Ryerson University, Canada; <sup>2</sup>Department of Chemistry and Biology, Ryerson University, Canada

**Does cannabidiol affect the physical properties of anhydrous milk fat and palm kernel oil?** Joseph Cooney\*<sup>1</sup>, Silvana Martini<sup>2</sup>, <sup>1</sup>Department of Nutrition, Dietetics and Food Sciences, Utah State University, United States; <sup>2</sup>Utah State University, United States

**Physical properties of beeswax-based oleogel-emulsion as a delivery system of probiotics.** Rycal Blount\*, North Carolina A&T State University, United States

**Consumers' perceptions and associations on plant-based cheese analogue in Malaysia.** Amelia Najwa Ahmad Hairi\*<sup>1</sup>, Ungku Fatimah Ungku Zainal Abidin<sup>2</sup>, Maimunah Sanny<sup>2</sup>, Nur Qistina Aznor Shahril<sup>2</sup>, <sup>1</sup>Oils and Fats, Sime Darby Plantation Research Sdn Bhd, Malaysia; <sup>2</sup>Universiti Putra Malaysia, Malaysia

**Cocoa butter crystallization and fat bloom formation in the presence of rice bran wax.** Pawitchaya Podchong\*<sup>1</sup>, Sopark Sonwai<sup>2</sup>, D errick Rousseau<sup>3</sup>, <sup>1</sup>Department of Food Science and Technology, Faculty of Agricultural Technology and Agro-Industry, Rajamangala University of Technology Suvarnabhumi, Thailand; <sup>2</sup>Department of Food Technology, Faculty of Engineering and Industrial Technology, Silpakorn University, Thailand; <sup>3</sup>Department of Chemistry and Biology, Ryerson University, Canada

**Effect of cannabidiol on crystallization behavior and physical properties of cocoa butter and palm oil.** Isaac Hilton\*<sup>1</sup>, Joseph Cooney<sup>2</sup>, Silvana Martini<sup>1</sup>, <sup>1</sup>Utah State University, United States; <sup>2</sup>Department of Nutrition, Dietetics and Food Sciences, Utah State University, United States

**African butter seed fat: A potential substitute for cocoa butter.** Sandaru Jayathissa\*<sup>1</sup>, Buddhika Silva<sup>2</sup>, Shiromi De Silva<sup>3</sup>, Renuka Jayatissa<sup>2</sup>, Terrence Madhujith<sup>1</sup>, <sup>1</sup>Food Science and Technology, University of Peradeniya, Sri Lanka; <sup>2</sup>Department of Nutrition, Medical Research Institution, Sri Lanka; <sup>3</sup>Department of Electron microscopy, Medical Research Institute, Sri Lanka

**Temperature-dependent phase behaviour of blends of SSS (tristearin) and SSO (1,2-distearoyl-3-oleoyl-rac-glycerol).** Khakhanang Wijarnprecha\*<sup>1</sup>, Ryan West<sup>2</sup>, D errick Rousseau<sup>3</sup>, <sup>1</sup>Ryerson University, Canada; <sup>2</sup>Mondelez International, United States; <sup>3</sup>Department of Chemistry and Biology, Ryerson University, Canada

**Temperature-dependent microstructure and rheology of fat in adipose tissue in pork, beef and lamb.** Khakhanang Wijarnprecha\*<sup>1</sup>, Philipp Fuhrmann<sup>2</sup>, Christopher Gregson<sup>3</sup>, Matt Sillick<sup>3</sup>, Sopark Sonwai<sup>4</sup>, D errick Rousseau<sup>2</sup>, <sup>1</sup>Ryerson University, Canada; <sup>2</sup>Department of Chemistry and Biology, Ryerson University, Canada; <sup>3</sup>Paragon Pure Inc, United States; <sup>4</sup>Silpakorn University, Thailand

**Inclusion complexes between amylose and long-chain dicarboxylic acids prepared by jet cooking: Characterization and thermal properties.** James Kenar\*<sup>1</sup>, David Compton<sup>2</sup>, Steve Peterson<sup>3</sup>, Frederick Felker<sup>1</sup>, <sup>1</sup>Functional Food Research, USDA ARS MWA NCAUR, United States; <sup>2</sup>Renewable Products Technology, USDA ARS MWA NCAUR, United States; <sup>3</sup>Plant Polymer Research, USDA ARS MWA NCAUR, United States

**Exploring plant biodiversity to extract oil bodies for sustainable food applications.** Nathalie Barouh\*<sup>1</sup>, Claire Berton-Carabin<sup>2</sup>, Thierry Chardot<sup>3</sup>, Sabine D'andrea<sup>3</sup>, Jean-Fran ois Fabre<sup>4</sup>, Yann Gohon<sup>3</sup>, Eric Lacroux<sup>7</sup>, Val erie Lullien-Pellerin<sup>5</sup>, Val erie Micard<sup>5</sup>, Othmane Merah<sup>4</sup>, Anne Meynier<sup>2</sup>, Romain Valentin<sup>4</sup>, V eronique Vi e<sup>6</sup>, Pierre Villeneuve<sup>7</sup>, Claire Bourlieu-Lacanal<sup>5</sup>, <sup>1</sup>CIRAD, France; <sup>2</sup>UR BIA, INRAE, France; <sup>3</sup>UMR 1318 Institut Jean-Pierre Bourgin (IJBP), INRAE/ AgroParisTech/ Universit e Paris-Saclay, INRAE, France; <sup>4</sup>UMR 1010 LCA, INRAE/ Universit e de Toulouse/INPT/ENSIACET, United States; <sup>5</sup>UMR IATE,

INRAE/Univ Montpellier/Institut Agro, France; <sup>6</sup>Soft Matter, Institut de Physique de Rennes, Université de Rennes 1, France; <sup>7</sup>UMR QUALISUD, CIRAD/Univ Montpellier/Institut Agro/IRD/Univ Réunion, France

**Candelilla and rice bran wax as oleogelators in soybean oil for deep frying application.** Maslia Manja Badrul Zaman\*<sup>1</sup>, Amelia Najwa Ahmad Hairi<sup>1</sup>, Norliza Saparin<sup>2</sup>, Ahmadilfitri Md Noor<sup>2</sup>, <sup>1</sup>Oils and Fats, Sime Darby Plantation Research Sdn Bhd, Malaysia; <sup>2</sup>Sime Darby Plantation Research Sdn Bhd, Malaysia

**Chemical and physical stability of EPA and DHA fortified plant milk analogs.** Abigail A. Sommer\*, Yael Vodovotz, Department of Food Science and Technology, The Ohio State University, United States

**Comparative analysis of cocoa beans from different climatic regions in Togo.** Daniel Kalnin\*, ISTOM, France

**Effect of dispersed aqueous droplet volume fraction on the rheology and structure of water-in-oil emulsions stabilized with fat crystals.** Veronica Hislop\*<sup>1</sup>, Dérick Rousseau<sup>2</sup>, <sup>1</sup>Molecular Science, Ryerson University, Canada; <sup>2</sup>Department of Chemistry and Biology, Ryerson University, Canada

**Effect of waxes on oil separation and texture properties of peanut butter.** Md. Jannatul Ferdous\*<sup>1</sup>, Rycal Blount<sup>2</sup>, Nathan Zauner<sup>1</sup>, Roberta Silva<sup>1</sup>, <sup>1</sup>Family and Consumer Sciences, North Carolina A&T State University, United States; <sup>2</sup>North Carolina A&T State University, United States

**Effects on the physical properties of corn oil oleogels structured with different ratios of rice bran or carnauba waxes.** Jabarius Jones\*<sup>1</sup>, Jaden Payne<sup>1</sup>, Rycal Blount<sup>2</sup>, Roberta Silva<sup>1</sup>, <sup>1</sup>Family and Consumer Sciences, North Carolina A&T State University, United States; <sup>2</sup>North Carolina A&T State University, United States

**Physicochemical properties of bambangan (*Mangifera pajang*) kernel fat and its stearin mixtures with cocoa butter.** Hasmadi B. Mamat\*<sup>1</sup>, Norazlina Ridhwan<sup>2</sup>, <sup>1</sup>Faculty of Food Science and Nutrition, University Malaysia Sabah, Malaysia; <sup>2</sup>Universiti Malaysia Sabah, Malaysia

**Solubilized proteins as a fat block in production.** Stephen Kelleher\*, Wayne Saunders, William Fielding, Kemin Industries, United States

**Static in vitro digestibility impacted by emulsion crystallinity under different experimental conditions.** Ye Ling Li\*, Amanda J. Wright, Human Health & Nutritional Sciences, University of Guelph, Canada

**Sucrose esters potential as oleogelators to form oleogels using different structuration routes.** Thais da Silva\*<sup>1</sup>, Vicent Baeten<sup>2</sup>, Sabine Danthine<sup>1</sup>, <sup>1</sup>Gembloux Agro-Bio Tech, University of Liege, Belgium; <sup>2</sup>Quality and Authentication of Products, Walloon Agricultural Research Centre, Belgium

**Tuning suspension rheology in hybrid capillary suspension-oleogels for edible oil structuring.** Selvyn Simoes\*<sup>1</sup>, Dérick Rousseau<sup>2</sup>, <sup>1</sup>Ryerson University, Canada; <sup>2</sup>Department of Chemistry and Biology, Ryerson University, Canada