

2018 AOCs Annual Meeting & Expo

May 6–9 | Minneapolis Convention Center | Minneapolis, Minnesota, USA



Processing (PRO) Interest Area Tentative Technical Program

As of January 3, 2018

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

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

Monday Afternoon

PRO 1: Processing ABC — Part I

Chairs: Farah Skold, Solex Thermal Science Inc., Canada; and Naudy Suarez, Richardson Oilseed Ltd., Canada

Advancements in Vegetable Oil Extraction and Oil Processing. Mohammad S. Alam, *Texas A&M University, USA*

Screw Press Technology for Oil Extraction. Eric D. Stibora, *Anderson International, USA*

Solvent Extraction Overview. Timothy G. Kemper, *Desmet Ballestra, USA*

Pilot Plant Concept “EthaNa” for Ethanol Extraction of Dehulled Canola Seeds. Gunter Börner and Bernd Steinhauer, *B+B Engineering GmbH, Germany*

Energy Optimization in Soybean Processing. Mohamed Abid, *Solex Thermal Science Inc., Canada*

Oilseed Conditioning and Effects on Extraction. William C. Mophew, *Crown Iron Works, USA*

Tuesday Morning

BIO 2.2 / PRO 2: Advances in Enzyme Processing Technologies

Chairs: Xuebing Xu, Wilmar Global Research and Development Center, China; and Flavio Galhardo, Bunge Global Innovation, USA

Design and Synthesis of New Lipid Molecules by Assembling Nature Segments for Multi-functionalities. An Enzymatic Solution. Zheng Guo, *Aarhus University, Denmark*

Value and Potential of Phospholipase C Assisted Enzymatic Degumming in Vegetable Oils. Ying Zha¹, Arjen Sein², Steve Gregory³, Greg LeFebvre⁴, and Michael Jung⁵, ¹*DSM, Netherlands*; ²*DSM Biotechnology Center, The Netherlands*; ³*DSM, USA*; ⁴*DSM Food Specialties, Inc, USA*; ⁵*DSM, USA*

PRO 2.1: Environment, Health, Safety and Sustainability

Chair: Richard Barton, N. Hunt Moore & Associates, USA

Managing Environmental Challenges in Uncertain Times. Michael J. Boyer, *AWTMS, USA*

Creating Triple Win Sustainability Programs. William S. Minor, *CHS, USA*

Test Tube to Tanker: Stage Gate Engineering as a Guide to Process Development. Cecil T. Massie, *Wood, USA*

Challenges and Opportunities in Effluent Water Treatment for Oil Seed Processing Plants. Rakesh Patel, *ADF Engineering, United States*

Creating an Effective Dust Hazard Analysis for NFPA 652 Compliance. Matthew Williamson, *ADF Engineering, USA*

Tuesday Afternoon

PRO 3: By-product Processing

Chairs: Norman Smallwood, The Core Team, USA; and Samia Mezouari, Canada

Current Situation for Spent Bleaching Earth Disposal. Norman J. Smallwood, *The Core Team, USA*

Processing of Atlantic Salmon (*Salmo salar*) Heads for the Extraction of Proteoglycans. Subin R.C.K. Rajendran¹, Aishwarya Mohan², Zied Khiari³, and Beth Mason², ¹*Department of Chemistry, Dalhousie University, Canada;* ²*Verschuren Centre for Sustainability in Energy and the Environment, Canada;* ³*Lethbridge College, Canada*

Oil Recovery from Palm Kernel Meal using Subcritical Water Extraction in a Stirred Tank Reactor. Johnnys A. Bustillo Maury¹, Andres F. Aldana Rico*¹, Jerry W. King², Cindy L. Garcia Pinto¹, Ingrid N. Hernandez Medina¹, Jose Urbina³, Juan C. Urueta³, Marco E. Sanjuan Mejia⁴, and Antonio J. Bula Silvera¹, ¹*Universidad del Norte, Colombia;* ²*Critical Fluid Symposia, USA;* ³*PALMACEITE SA, Colombia;* ⁴*msanjuan@uninorte.edu.co, Colombia*

Use of Lipids for Enhancing the Nutritional Value, Digestibility and Health Safety of Hay. William J. Hausmann, *The Core Team, USA*

Investigation of the Selective Extraction of Non-polyisoprenic Compounds from *Parthenium argentatum* Biomass with Pressurized Fluids. Teerasak Punvichai*¹, Daniel Pioch², Serge PALU², and Eric Tardan², ¹*Prince of Songkla University, Thailand;* ²*CIRAD, UR 114 Biowoeb, TA-B 114/16, 34398, Montpellier, France, France*

Orange Oil Based Highly Flame-retardant Rigid Polyurethanes Foams for Industrial Applications. Sanket Bhojate, Mihail Ionescu, Pawan Kahol, and Ram Gupta*, *Pittsburg State University, USA*

Impact of Heat and Pressure on the Polyphenol Composition of Plant Extracts. Michael Eskin and Usha Thiyam*, *University of Manitoba, Canada*

Challenges of Extraction and Downstream Processing of Polyunsaturated Oils from Microbial Biomass. Thushan S. Withana-Gamage, and Udaya N. Wanasundara, *POS Bio-Sciences, Canada*

BIO 3.1 / PRO 3.1: Biodiesel

Chairs: Casimir Akoh, University of Georgia, USA; and Per Munk Nielsen, Novozymes, Denmark

Liquid Lipases for Enzymatic Refining: Technical Advantages Beyond Green Technology. Zheng Guo, Aarhus University, Denmark

Improving Pre-treatment Efficiency of Oil Feedstock using Adsorbent Filter Aids. David Gittins, Li-Chih Hu, and Nathan Dias*, Imerys Filtration Minerals Inc., USA

Improving Pre-treatment Efficiency of Oil Feedstock using Adsorbent Filter Aids.

Online Real-time Quality Control of Biodiesel using Near-Infrared Spectroscopy.

Integrating Conventional and Enzymatic Approaches Towards Industrial Biodiesel Production.

FFA Reduction and Production Control.

Enzymatic Esterification to Handle the FFA in Biodiesel Production.

LOQ 3a / PRO 3.2a: Effect of New Processing Technologies on Lipid Oxidation

Chairs: David Johnson, Kalsec Inc., USA; and Antonios Papastergiadis, Desmet Ballestra, USA

Antioxidant and Antibacterial Activity of Different Extracts from Herbs Obtained by Maceration or Supercritical Technology. Ignacio Vieitez, Lucía Maceiras, Iván Jachmanián, and Silvana Alborés, UdelaR, Uruguay

Oxidation and Hydrolysis of Lipids in Marine Edible Shellfishes During Hot Drying Process. Dayong Zhou¹, Zhongyuan Liu², Kaiqi Gang³, Fereidoon Shahidi⁴, and Tong Wang⁵, ¹Dalian Polytechnic University, China; ²College of Food Science & Technology, Dalian Polytechnic University, China; ³School of Food Science and Technology, Dalian Polytechnic University, China; ⁴Memorial University of Newfoundland, Canada; ⁵Iowa State University, USA

Effect of Spray-Dried Flavonoid Microparticles on Oxidative Stability of Methyl Linoleate as Lipid Model System. Manuel J. Palma¹, Gloria Márquez-Ruiz², Paula García³, Francisca Holgado⁴, Cristina Vergara³, Begoña Giménez⁵, and Paz S. Robert¹, ¹Universidad de Chile, Chile; ²Instituto de Ciencia y Tecnología de Alimentos y Nutrición (ICTAN-CSIC), Spain; ³Departamento de Ciencia de los Alimentos y Tecnología Química, Facultad de Ciencias Químicas y Farmacéuticas, Universidad de Chile, Chile; ⁴Instituto de Ciencia y Tecnología de Alimentos y Nutrición (ICTAN-CSIC); ⁵Departamento de Ciencia y Tecnología de los Alimentos, Facultad Tecnológica, Universidad de Santiago de Chile, Chile

Wednesday Morning

PRO 4: Processing ABC — Part II

Chairs: Bruce Patsey, Oil-Dri Corporation of America, USA; and Kris Knudson, Crown Iron Works Co., USA

Composite Adsorbent - Filter Aid for High Performance Oil Purification. Li-Chih Hu, David Gittins, and Nathan Dias, Imerys Filtration Minerals Inc., USA

The Use of Controlled Flow Cavitation to Improve the Performance of Degumming, Refining and Biodiesel Operations. Darren J. Litle¹, Dr. Peter Reimers¹, and Oleg Kozyuk², ¹*Arisdyne Systems, Inc., USA*; ²*ASI Chief Technology Officer, Ukraine*

Recent Developments in Hydrodynamic Nanocavitation in Oil Refining: The Next Best Thing. Marc J. Kellens, *Desmet Ballestra Group, Belgium*

Low Color Bodies During Bleaching Impacting Refining Cost. Jorge Bello*, *EP Engineered Clays, USA*

Glycidyl Ester Formation and Mitigation. Linsen Liu, Stephen Lumor, and Tri Le, *IOI Lodders Croklann, USA*

Wednesday Afternoon

PRO 5: New Technologies for Oil Processing

Chairs: Darren Litle, Arisdyne Systems, Inc., USA; and Gijs Calliauw, Desmet Ballestra Group, Belgium

Elimination of MCPDs and GEs in Edible Oils. Joseph Rongione, *Stepan Company, USA*

Dry Condensing in Oil Refining: Latest Improvements to Further Enhance Oil Quality, Plant Safety, Process Efficiency and Overall Sustainability. John A. Weston*¹, Jelle L. Nijdam², and Pieter Jellema², ¹*Desmet Ballestra, USA*; ²*Solutherm, The Netherlands*

New Applications for Controlled Flow Cavitation in the Refining of Edible Oils. Dr. Peter Reimers¹, Oleg Kozyuk², and Darren J. Litle¹, ¹*Arisdyne Systems, Inc., USA*; ²*ASI Chief Technology Officer, Ukraine*

New Developments in Physical Refining and Removal of Contaminants in Edible Oils. Perry Alasti, *Artisan Industries Inc., USA*

Soy and Other Protein Concentrates. Alexander M. Danelich, *Crown Iron Works, USA*

Enzymatic Gums Deoiling. Antonios Papastergiadis, *Desmet Ballestra, USA*

PRO 5.1: General Processing

Chairs: Mohammad Alam, Texas A&M University; and Richard Clough, Texas A&M University, USA

Selectively Extracting Triglycerides by Chain Length and Saturation from Microalgae with Supercritical Carbon Dioxide. Thomas A. Kwan, Qingshi Tu, and Julie B. Zimmerman, *Yale University, United States*

Enzymatic Degumming and Expanders for Oil Yield Gain. Steve Gregory*, *DSM, USA*

Reduction of Toxins in Fish Oil from ppm to ppb in a Specialized Passive Stripper at Micron-level Vacuum. Caitlin A. Davis*, *Artisan Industries Inc., USA*

Formation of 3-MCPD and Glycidyl Esters in Palm Oil using Different Laboratory-scale Refining Units. Biow Ing Sim, and Chin Ping Tan*, *Universiti Putra Malaysia, Malaysia*

PRO-P: Processing Poster Session

Chairs: Ozan Ciftci, University of Nebraska-Lincoln, USA; and Ali Ubeyitogullari, University of Nebraska-Lincoln, USA

Posters will be available for viewing from noon on Monday, May 7 through 2:00 p.m. Wednesday, May 9, 2018.

CLA-rich Vegetable Oil Production by Adapting a Small Scale Hydrogenation Reactor. Chaun Min Ruan and Andrew Proctor*, *University of Arkansas, USA*

Quantitative Isolation of Cannabinoids from Plant Material. Albert J. Dijkstra and Robert W. LaChance, *FAOCS, France*

Effects of Heat Pretreatment of Wet-milled Corn Germ on Physicochemical Properties of Oil. Liyou Zheng¹, Jianhua Huang², Jun Jin³, Xingguo Wang³, and Qingzhe Jin³, *¹State Key Laboratory of Food Science and Technology Synergetic Innovation Center of Food Safety and Nutrition School of Food Science and Technology, China; ²School of Food Science and Technology, Jiangnan University, China; ³Jiangnan University, China*