As of April 13, 2017

2017 AOCs Annual Meeting
and Industry Showcases

April 30–May 3 | Rosen Shingle Creek | Orlando, Florida, USA

Processing (PRO) Interest Area
Tentative Technical Program

This list of presentations is not final and subject to change.

Processing 2018 Session Planning Roundtable
Monday, May 1 at 12:30 pm

All meeting attendees are invited to attend Roundtable discussions and assist in developing the technical program for the 2018 AOCs Annual Meeting. AOCs and the Annual Meeting Program Committee greatly value your input! Division membership is not required to participate.

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

Monday Afternoon

PRO 1: Processing from Seed to Refined Oil
Chairs: Farah Skold, Solex Thermal Science Inc., Canada; and Hans Christian Holm, Novozymes A/S, Denmark

Cleaning, Cracking, and Dehulling Soybeans. Bill Morphew, Crown Iron Works Company, USA


Modern Pressing Technology. Jon Hanft, HF Press + Lipid Tech, USA

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

Recent Developments in Degumming of Oils and Fats. Robert Zeldenrust, GEA, Germany

Current State of Adsorptive Bleaching, Materials, and Processes. Chris Mitchell, Clariant Corp., USA

Deodorization. William Younggreen, Alfa Laval Inc., USA

Fat Modification Technologies—Fractionation and Interesterification. Gijs Calliauw, Desmet Ballestra Group, Belgium
Tuesday Morning

**PRO 2: Refining—Basic and New Technologies**
*Chairs: Xuebing Xu, Wilmar Biotechnology R&D Center (Shanghai) Co., Ltd., China; and Krish Bhaggan, IOI Loders Croklaan BV, The Netherlands*

- **Enzymes to Improve OER in Palm Oil Extraction.** Chandrakumar L. Rathi and Saylee Pradhan, Advanced Enzyme Technologies Ltd., India

- **Enzymatic Synthesis of Biodiesel from Waste Cooking Oils.** Li Deng, Meng Wang, Kaili Nie, Fang Wang, and Tianwei Tan, Beijing University of Chemical Technology, China

- **Biocatalysts in Refining and Concentrating PUFA Oils and Producing Advanced Bioactives.** Jari Kralovec, Paul Mugford, Erick Suarez, and Zhuliang Tan, DSM Nutritional Products, Canada

- **New Concepts in Oil Degumming.** Fang Cong*, Ulrich Sohling*, Kirstin Suck*, Yuanyuan Gao*, and Xuebing Xu*, ¹Wilmar, China; ²Clariant, Germany; ³Wilmar Biotechnology R&D Center (Shanghai) Co., Ltd., China

- **Plant Scale Enzymatic FFA-remediation of Rice Bran Oil.** Steen Balchen¹, Prasert Setwipatanachai², Yee Hong Seng³, CheeKeong Tan⁴, and Lars Harild⁵, ¹Alfa Laval, Denmark; ²Surin Bran Oil, Thailand; ³Novozymes, Malaysia; ⁴Alfa Laval, Malaysia; ⁵Alfa Laval Copenhagen, Denmark

- **Enzymatic Synthesis of Functional Lipids-phytosterol Esters with Controllable Fatty Acid Composition.** Mingming Zheng, Oil Crops Research Institute, CAAS, China

- **Chemo-enzymatic Synthesis and Characterization of a Novel Array of Phenolic-containing Emulsifiers: A Physico-chemical Study.** Zheng Guo¹, Bianca Perez², and Sampson Anankanbil*, ¹Aarhus University, Denmark; ²Dept. of Engineering, Aarhus University, Denmark

- **Enzymatic Production of Specialty Fats CBE and HMF Substitute – SOS/OPO.** Krish Bhaggan and Jeanine Werleman, IOI Loders Croklaan, The Netherlands

- **Oil Yield Increase in Enzymatically Assisted Degumming of Vegetable Oil in a 1-Step Process.** Nina Schroegel-Truxius, AB Enzymes, Germany

Tuesday Afternoon

**PRO 3: Refining—Basic and New Technologies**
*Chairs: Jim Willits, Desmet Ballestra, USA; and William Younggreen, Alfa Laval Inc., USA*

- **AquaHy—An Aqueous Extraction of Oil Crops.** Stefan Kirchner* and Jörg Heidhues, GEA Westfalia Separator Group GmbH, Germany
Expanding the Enzymatic Degumming Toolbox with a New Phospholipase C. Hanna M. Lilbæk* and Per Munk Nielsen, Novozymes, Denmark

Oil Modification: Solution or Problem for 3-MCPD/GE Mitigation. Marc J. Kellens, Wim De Greyt*, Véronique Gibon, and Jeroen Maes, Desmet Ballestra Group, Belgium

Micronutrient Recovery in Deodorization. Steen Balchen*, Alfa Laval, Denmark

How Silica Can Improve Quality and Reduce Operating Cost for Enzymatic Interesterification. Jim Willits*, Desmet Ballestra, USA

3-MCPD/GE—Current and Future Technologies for Mitigation. Danilo Lima, Alfa Laval, Brazil

New Developments in the Enzyme Processing of Oilseeds. Steve Gregory, DSM, USA

**BIO 3.1 / PRO 3.1: Biodiesel from Low Quality Feed Stocks**

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

Lipase-mediated Biodiesel Production and Its Commercialization Progress. Dehua Liu and Wei Du, Tsinghua University, Beijing, China

Industrial Applications in Continuous Enzymatic Biodiesel Processing. Brent Chrabas and Stu Lamb, Viesel Fuel LCC, USA

Biodiesel Produced from Oil Recovered from Waste Water Plants. Frankie Mathies and Bo Munk, Tactical Fabrication, USA

Industrial Enzymatic Biodiesel from Low-cost Feedstocks. Marcelo Cantele, Tranfertech Gestão de Inovações LTDA, Brazil

Customized Solutions through Modular Engineering of Renewable Biodiesel Production Plants. G. Calliauw, W. De Greyt, D. Altera, and M. Kellens, Desmet Ballestra Group, Belgium

Enzymatic Biodiesel from Distiller’s Corn Oil. Experiences from Full Scale Production. Anders Rancke-Madsen, Mark Bollinger, Hans Christian Holm, and Per Munk Nielsen, Novozymes, Denmark

Eurofins QTA, AOCS Ck2-09 Solution for the Quality/Process Control in Enzymatic Biodiesel Production. Nan Wang and Kangming Ma, Eurofins Analytical, USA

**Wednesday Morning**

**PRO 4: Environment and Regulatory**

*Chairs: David Selig, Louis Dreyfus Co., USA; and Eduardo Mualem, Bunge Southern Cone, Argentina*

Valorizing Waste Streams by Integrated Biorefining Process. Jingbo Li and Zheng Guo, Aarhus University, Denmark

Impact of New NFPA 652 Combustible Dust Standard on Oilseeds Crush Plants. Matthew Williamson, ADF Engineering, USA

100% Contact Extractor: Thicker Flakes and Low Residual Oil. Adolfo T. Subieta, Desmet Ballestra North America Inc., USA

**Wednesday Afternoon**

**PRO 5: General Processing**
*Chairs: Kerry Staller, BSI Engineering, USA; and Nurhan Dunford, Oklahoma State University, USA*

Immersion and Percolation Extraction for Solvent Plants and Specialty Applications. Richard W. Ozer, Crown Iron Works, USA

Lipolytic Stability During Wet Storage of Autotrophic Microalgae. Lieselot Balduyck¹, Sebastiaan Bijttebier², Charlotte Bruneel¹, Griet Jacobs¹, Stefan Voorspoels¹, Koenraad Muylaert¹, and Imogen Foubert¹. ¹Katholieke Universiteit Leuven Kulak, Belgium; ²VITO, Belgium

Effect of Extraction Method on the Composition and Oxidative Stability of Omega-3-rich Camelina sativa Seed Oil. Henok D. Belayneh, Ozan N. Ciftci, Randy L. Wehling, and Ed Cahoon, University of Nebraska-Lincoln, USA

Effect of Ultrasound on Extraction Yield and Quality Characteristics of Extra Virgin Olive Oil. Alev Y. Aydar, Manisa Celal Bayar University, Turkey

Influence of Adsorption Parameters on Physical Refining of Sunflower Oil Using a New Mesoporous Silica Based Adsorbent. Ecem Tiryaki, Tulay Merve Temel, Burcu Karakuzu, and Sevil Yucel, Yildiz Technical University, Turkey

The Effects of Oilseed Processing on Bioactive Compounds in Edible Canola Oil: A Case Study Involving Australian Processing Plants. Clare L. Flakelar¹, David J. Luckett², Julia A. Howitt³, Gregory Doran³, and Paul D. Prenzler³. ¹Charles Sturt University, Australia; ²Graham Centre for Agricultural Innovation, Australia; ³School of Agricultural and Wine Sciences, Charles Sturt University, Australia

Applying Different Filtration Parameters on Crude Canola Oil with Metal Doped Nanoporous Silica Adsorbent. Tulay Merve Temel¹, Burcu Karakuzu¹, Pınar Terzioglu², and Sevil Yucel¹, ¹Yildiz Technical University, Turkey; ²Muğla Sıtkı Koçman University, Turkey

Development of an Up-grading Process to Produce MLM Structured Lipids from Sardine Discards. Rocio Morales-Medina*, M. Munio, A.M. Guadix and E.M. Guadix, University of Granada, Spain

**ANA 5.1/PRO 5.1: Process Control Utilizing NIR and Similar On-line Analytical Tools**
*Chairs: Chris Dayton, Bunge Ltd., USA; and John Glenski, Automation Plus, USA*

Process Optimization in the Edible Oil Industry with NIR-Online Measurements. Dominik Margraf, Yosra Allouche, and Michael Eckert, BUCHI NIR-Online GmbH, Germany
Implementing Alarm Management (ISA 18.2)—Improving Efficiency and Limiting Risk. Monte Vander Velde, Interstates, USA

FT-IR Analysis for Process Control. Chris Dayton, Bunge Limited, USA

Level Measurement of Industrial Oils. Philip H. McCain¹, Brent Frizzel², and Tim Thomas²; Automation Plus, USA; ²Endress+Hauser, USA

At-line Near-Infrared Spectroscopy Monitoring Algal Fermentation Process. Yao Lu*, DSM Nutritional Products, USA

PRO-P: Processing Poster Session
Chair: Ozan Ciftci, University of Nebraska-Lincoln, USA; and Junsi Yang, University of Nebraska-Lincoln, USA

Dedicated Poster Viewing
Monday, May 1 • 5:00–6:30 pm

**Posters will be available for viewing from Monday at 7:30 am until Wednesday at 3:00 pm.

Determination of Pore Size and Lignin Distribution in Coconut Shells Residue by Using Stain Technology. Prashant Katiyar¹, Shailendra K. Srivastava¹, and Vinod K. Tyagi²; Sam Higginbottom Institute of Agriculture, Technology and Sciences, India; ²Harcourt Butler Technological Institute, India

Comparison of the Newly Formulated Silica Adsorbent Bleaching Capacity with Traditional Adsorbents. Burcu Karakuzu, Sevil Yucel, and Tulay Merve Temel, Yildiz Technical University, Turkey

Novel Technology to Produce High Quality Ester and High Purity Vitamin E from Deodorizer Distillate. Kousuke Hiromori¹, Tomoya Watanabe¹, and Naomi Shibasaki-Kitakawa², ²Dept. of Chemical Engineering, Tohoku University, Japan

Application of Imidazolium-based Ionic Liquids as Co-solvent for Extraction of Oil from Nahar Seeds Using Sonoreactor. Adeeb Hayyan¹, Mohamed E.S Mirghani², Shahidah N. Rashid³, Maan Hayyan⁴, M. Y. Zulkifli⁴, and Fazrizarul S. Sani³; ¹University of Malaya, Malaysia; ²Dept. of Biotechnology Engineering, Faculty of Engineering and International Institute for Halal Research and Training (INHART), International Is, Malaysia; ³University of Malaya Centre for Ionic Liquids (UMCL), Kuala Lumpur, Malaysia; ⁴Institute of Halal Research University of Malaya, Malaysia

Lowering the Temperature Improves Enzymatic Prefractionation of EPA and DHA. Ryosuke Hoshina¹, Yomi Watanabe², Kazumi Katagiri¹, and Hideaki Kobayashi¹; ¹Kewpie Corporation, Japan; ²Osaka Municipal Technical Research Institute, Japan

Impact of Roasting on Specific Phytochemicals in Perilla Seed Oil Extracted Using Supercritical Carbon Dioxide. Hyo Jung Cho, Nakyung Choi, and In-Hwan Kim, Korea University, Republic of Korea

Development of a Cocoa Butter Improver by Chemical Interesterification and Thermal Fractionation. Glazieli M. de Oliveira¹, Ana Paula B. Ribeiro¹, and Theo G. Kieckbusch²; ¹University of Campinas, Brazil; ²ICT-Institute of Science and Technology, UNIFAL, Brazil
Comparison of Different Solvents for Extraction of Krill Oil from Krill Meal: Lipid Yield, Phospholipids Content, Fatty Acid Composition, and Minor Components. Dan Xie*, Jun Jin¹, Jiang Sun², Xingguo Wang³, and Qingzhe Jin³. ¹Jiangnan University, China; ²Zhonghai Ocean (Wuxi) Marine Equipment Engineering Co., Ltd., China

Stabilization of Meat Products Using Functionalized Pork Fat Produced by Enzymatic Glycerolysis and Short Path Distillation. Eleonora Miquel Becker, Bjørn Alexander S. Hansen, Maria Barmar Larsen, and Mia Fiilsøe Falkeborg, Danish Technological Institute, Denmark

Influence of Active Carbon in Bleaching Process in Coconut Oil. Jin Sup Shin¹, Minyoung Kim³, Dongjin Yu², Eunseok Jang², Yoonchang Kang², and Bongchan Kim². ¹Samyang Corporation, Korea; ²Samyang Co., South Korea

Heterogeneous Interesterification Catalyst as Alternative to Enzymatic and Chemical Processes. Gary Evans¹, Natalie Herring², Shingo Watanabe*², and Aalbert Zwijnenburg³. ¹Johnson Matthey, UK; ²Johnson Matthey, USA; ³AkzoNobel, The Netherlands

Ricinodendron heudelotii Oil: An Original Source of α-eleostearic Acid, β-eleostearic Acid, and α-Linoleic Acid. Diakaridja Nikiema*¹, Muriel Cerny¹, Eric Lacroux², and Zéphirin Mouloungui¹. ¹Laboratoire de Chimie Agro-Industrielle, France; ²Chimie Agro-Industrielle, France

New Developments to Increase the Production Rate of Chemically Refined Oils. Li-Chih Hu*, Nathan Dias, and David Gittins, Imerys Filtration Minerals Inc., USA

Adsorbent Filter Aids for the Treatment of Edible Oils and Biodiesel Feedstocks. Nathan Dias*, Li-Chih Hu, and David Gittins, Imerys Filtration Minerals Inc., USA

Valorization of Animal By-products Using Short Path Distillation. Mia Fiilsøe Falkeborg¹, Bjørn Alexander Hansen, Maria Barmar Larsen, and Eleonora Miquel Becker, Danish Technological Institute, Denmark