

2018 AOCS Annual Meeting & Expo

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



Biotechnology (BIO) Interest Area Tentative Technical Program

As of April 1, 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

BIO 1: Biocatalysis

Chairs: Jun Ogawa, Kyoto University, Japan; and Ching Hou, USDA, ARS, NCAUR, USA

Identification of Molecular Species of Acylglycerols Containing Hydroxy Fatty Acids of Philippine Wild Edible Mushroom, *Ganoderma lucidum*. Ching T. Hou¹, Jiann-Tsyh Lin², Rich M. Dulay³, and Karen Ray⁴,
¹USDA, ARS, NCAUR, USA; ²WRRC, USDA, USA; ³Center for R&D, Central Luzon State University, Philippines;
⁴NCAUR, USDA, USA

Expression of Cyclooxygenase in *Mortierella alpina* 1S-4 for the production of a prostaglandin, PGF₂α. Jun Ogawa¹, Mohd Fazli Farida Asras¹, Hideaki Nagano¹, Yoshimi Shimada¹, Miho Takemura², Shigenobu Kishino³, and Akinori Ando¹, ¹Division of Applied Life Sciences, Graduate School Agriculture, Kyoto University, Japan; ²Ishikawa Pref. University, Japan; ³Kyoto University, Japan

Biotechnological Research for the Development of Sustainable Oil Palm Industry. Ahmad Parveez Ghulam Kadir, Rajinder Singh, Meilina Ong-Abdullah Ong-Abdullah, Umi Salamah Ramli, Omar Abdul Rasid, Mohamad Arif Abd Manaf, and Kushairi A, *Malaysian Palm Oil Board, Malaysia*

Screening of Fatty Acids Showing Selective Antibacterial Activity Against Acne-associated *Propionibacterium acnes*. Ayaka Uyama¹, Teizo Sugino¹, Shimemitsu Tanaka², and Toshihiro Nagao^{*2},
¹Momotani Juntenkan Ltd., Japan; ²Osaka Research Institute of Industrial Science and Technology, Japan

Metabolism of Soy Sugars by Genetically Engineered *Pseudomonas chlororaphis*. Daniel K.Y Solaiman, Richard D. Ashby, and Nicole V. Crocker, *USDA, ARS, ERRC, USA*

Xylose and Levulinic Acid: Two Inexpensive, Renewable Substrates for the Mixed-culture Biosynthesis of Unique Poly(hydroxyalkanoate) Polymer Blends with Controllable Properties. Richard D. Ashby, Daniel K.Y. Solaiman, and Gary Strahan, *USDA, ARS, ERRC, USA*

Biorefinery Process for Valuable Lipid Production by *Thraustochytrids*. Kenshi Watanabe, Kim H.V. Arafiles, Yoshiko Okamura, Takahisa Tajima, Yukihiko Matsumura, Yutaka Nakashimada, and Tsunehiro Aki*, *Hiroshima University, Japan*

Challenges to Develop Bioprocess for Lignin Paint. Yomi Watanabe, *Osaka Research Institute of Industrial Science and Technology, Japan*

Enzymatic Characterization of Metabolism of Food Derived Polyunsaturated Fatty acids by Gut Microorganisms Generating Bioactive Fatty Acids. Michiki Takeuchi¹, Shigenobu Kishino¹, Si-Bum Park¹, Nahoko Kitamura¹, and Jun Ogawa², ¹*Kyoto University, Japan*; ²*Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan*

BIO 1.1 / IOP 1: Biorenewable Polymers

Chairs: Richard Ashby, USDA, ARS, ERRC, USA; and Baki Hazer, Kapadokya University and Bülent Ecevit University, Turkey

Synthesis of Resinic Acid and Lignin Derivative Dimers for Copolymerization with Vegetable Oil-based Monomers. Audrey Llevot, *LCPO, France*

Dual Cure Alkyds. Mark D. Soucek, *University of Akron, USA*

Reflection of Structural Features of Oils on Properties of Polymeric Materials. Zoran Petrovic, *Pittsburg State University, USA*

Bio-based Oil Potential in Additive Manufacturing. Ivan Javni¹, Olivera Bilic², Jian Hong², Vivek Sharma¹, Xianmei Wan¹, and Jamie M. Messman³, ¹*Pittsburg State University, USA*; ²*Kansas Polymer Research Center/PSU, USA*; ³*Department of Energy's National Security Campus, managed by Honeywell FMT, LLC, USA*

Multifunctional Fatty Acid Macroperoxide Initiators Obtained by the Autoxidization. Synthesis of Block/Graft Copolymers via Free Radical and Ring Opening Polymerization. Baki Hazer, *Kapadokya University and Bülent Ecevit University, Turkey*

Super Palm Stearin from Enzymatic Directed Interesterification of Palm Oil. Noor Lida Habi Mat Dian¹, Miskandar Mat Sahri¹, Tan Chin Ping², and Lai Oi Ming², ¹*Malaysian Palm Oil Board, Malaysia*; ²*Universiti Putra Malaysia, Malaysia*

Transesterification of Waste Vegetable Oil using Spent FCC Catalyst-based Solid Base Catalyst. Zakir Hussain and Rakesh Kumar, *Rajiv Gandhi Institute of Petroleum Technology, India*

Unexpected Selectivity in the Functionalization of Neat Castor Oil Under Benign Catalyst-free Conditions. Latchmi Raghunanan^{1,2}, and José M. Franco², ¹*Trent Centre for Biomaterials Research, Departments of Physics & Astronomy and Chemistry, Trent University, Canada*; ²*Pro2TecS-Chemical Product and Process Technology Research Centre. Departamento de Ingeniería Química, Facultad de Ciencias Experimentales, Universidad, Spain*

Tuesday Morning

BIO 2: Biocatalysis II

Chairs: Lu-Kwang Ju, University of Akron, USA; and Ching Hou, USDA, ARS, NCAUR, USA

Better Understanding of Enzymatic Soy Processing through Modeling Monomeric Sugar Release. S.M. Mahfuzul Islam and Lu-Kwang Ju, *The University of Akron, USA*

Biosynthetic Pathways of Functional Carotenoids in Red Seaweed *Pyropia yezoensis*. Masashi Hosokawa, Hokkaido University, Japan

Production of Microbial Lipids using Crude Glycerol. Eiji Sakuradani, Naomi Murakawa, and Takaiku Sakamoto, Tokushima University, Japan

Alteration of Lipase Selectivity by Protein Engineering. Katja Zorn¹, Isabel Oroz-Guinea¹, Henrike Brundiek², and Uwe T. Bornscheuer*³, ¹Institute of Biochemistry, Germany; ²Enzymicals AG, Germany; ³University of Greiswald, Germany

Efficient Production of MLCT Oils by Lipase Reactions. Yutaro Kataoka, Yoshihiro Ueda, and Hidetaka Uehara, The Nisshin OilliO Group, Ltd., Japan

Preparation of Diethylhexyl Adipate by Lipase-catalyzed Esterification. In-Hwan Kim¹, TaeHoon Kim², Heejin Kim³, and Nakyung Choi², ¹Korea University, Republic of Korea; ²Korea University, South Korea; ³Dept. of Public Health Sciences, Graduate School, Korea University, Republic of Korea

Enzymatic Preparation of Medium- and Long-chain Diacylglycerols of High Purity in Combination with Solvent Extraction. Guanghui Li¹, Jiazi Chen¹, Zhen Zhang², Ying Li*³, and Yong Wang⁴, ¹Dept. of Food Science and Engineering, Jinan University, Guangzhou, China; ²South China University of Technology, China; ³Guangdong Saskatchewan Oilseed Joint Laboratory, Dept. of Food Science and Engineering, Jinan University, China; ⁴Jinan University, China

Stearidonic Acid Soybean Oil – Concentration and Enzymatic Modification. Casimir C. Akoh, University of Georgia, USA

Enzymatic Preparation of Monogalactosyldiacylglycerols Containing Pinolenic Acid. Byung Hee Kim, Sookmyung Women's University, Korea

Ultrasound Promoted Enzymatic Synthesis of Monoglyceryl Phenolic Acids and the Activities Study. Mingming Zheng, Oil Crops Research Institute, CAAS, China

ELOVL6 Catalyzes Elongation of n-13:0 and n-15:0 Odd Chain Saturated Fatty Acids in Human Cells. Zhen Wang^{1,2}, Dong Hao Wang¹, Yuliya Goykhman¹, Yuanyuan Yan¹, Peter Lawrence¹, Kumar S. D. Kothapalli², and J. Thomas Brenna², ¹Cornell University, USA; ²University of Texas at Austin, USA

BIO 2.1 / H&N 2: Dietary Lipids and the Gut Microbiota

Chairs: Barry Tulk, DuPont Nutrition & Health, USA; and Jun Ogawa, Kyoto University, Japan

Effect of Diet on the Gut Microbiota. Joanne Slavin, University of Minnesota, USA

Interaction Between Diets and Gut Commensal Bacteria in the Regulation of Immunological Health and Diseases. Jun Kunisawa, NIBIOHN, Japan

Role of Bile Acid in Gut Microbiota Alterations in Rats Fed a High-fat Diet. Atsushi Yokota, Masamichi Watanabe, Satoshi Ishizuka, and Satoru Fukiya, Research Faculty of Agriculture, Hokkaido University, Japan

Correlation Between Dietary Lipid, Gut Microbiota and Health. Jun Ogawa^{1,2}, ¹Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan; ²Res. Unit Physiol. Chem. Kyoto University, Japan

Dietary Fatty Acid Metabolism in Gut Microbiota. Shigenobu Kishino¹, Akiko Hirata, Michiki Takeuchi¹, and Jun Ogawa², ¹*Kyoto University, Japan*; ²*Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan*

10-oxo-12(Z)-octadecenoic Acid, a Linoleic Acid Metabolite Produced by Gut Microbiota, Enhances Energy metabolism by Activation of TRPV1. Tsuyoshi Goto*¹, Minji Kim², Tomoya Furuzono², Kunitoshi Uchida³, Shigenobu Kishino¹, Haruya Takahashi², Huei-Fen Jheng⁴, Jun Yamazaki⁵, Makoto Tominaga³, Jun Ogawa⁶, and Teruo Kawada², ¹*Kyoto University, Japan*; ²*Division of Food Science and Biotechnology, Graduate School of Agriculture, Kyoto University, Japan*; ³*Okazaki Institute for Integrative Bioscience, National Institute for Physiological Sciences, Japan*; ⁴*Division of Food Science and Biotechnology, Graduate School of Agriculture, Kyoto University, Japan*; ⁵*Department of Physiological Science and Molecular Biology, Fukuoka Dental College, Japan*; ⁶*Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan*

Effects of Fatty Acid Metabolites by a Gut Lactic Acid Bacterium on Lipid Metabolism in NASH Model Mice. Neng Tanty Sofyana*¹, Jiawen Zheng¹, Yuki Manabe¹, Yuta Yamamoto², Shigenobu Kishino¹, Jun Ogawa³, and Tatsuya Sugawara⁴, ¹*Kyoto University, Japan*; ²*Department of Anatomy and Cell Biology, Wakayama Medical University*; ³*Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan*; ⁴*Laboratory of Marine Bioproduct of Technology, Division of Applied Bioscience, Japan*

Gut Microbiota and Free Fatty Acids Receptors Mediated Host Energy Regulation. Junki Miyamoto and Ikuo Kimura, *Tokyo University of Agriculture and Technology, Japan*

Effects of the Intake of a Gut Microbial Linoleic Acid Metabolite, 10-hydroxy-cis-12-octadecenoic Acid (HYA), on Postprandial Hyperglycemia. Yasunori Yonejima and Kohey Kitao, *Nitto Pharmaceutical Industries, Ltd., Japan*

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

Overview and Recent Developments in Degumming, Interesterification and Biodiesel. Hans Christian Holm, *Novozymes A/S, Denmark*

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*

Enzymatic Interesterification. Chris Dayton, *Bunge Limited, USA*

Enzymatic Modification of Menhaden Oil to Incorporate Caprylic and/or Stearic Acid. Sarah A. Willett¹, Casimir C. Akoh¹, and Silvana Martini², ¹*University of Georgia, USA*; ²*Utah State University, USA*

Cold Enzymatic Degumming on Sunflower Seed Oil. Ling Hua and Alexey Shevchenko, *Alfa Laval Copenhagen A/S, Denmark*

How to Overcome the Barrier of Mucilage for Extraction of Omega 3 from Chia Oil? Gwendoline Gravé¹, Sidrine Koumba¹, Jean-Francois Fabre², Eric Lacroux³, Muriel Cerny⁴, Romain Valentin⁵, Othmane Merah¹, and Zéphirin Mouloungui⁴, ¹*INP - ENSIACET, France*; ²*LCA UMR1010 INRA-INP/ENSIACET, France*; ³*Chimie Agro-Industrielle, France*; ⁴*Laboratoire de Chimie Agro-Industrielle, France*; ⁵*INRA, France*

Pilot Enzymatic Production of Medium- and Long-Chain Triacylglycerols Using a Solvent-free Packed Bed Reactor. Zhen Zhang¹, Siwen Zhang², Xiaodong Xie², Xiang Ma³, Huihua Huang¹, and Yong Wang^{2*}, ¹School of Food Science and Engineering, South China University of Technology, China; ²Guangdong Saskatchewan Oil Seed Joint Laboratory, Dept. of Food Science and Engineering, Jinan University, China; ³Research School of Chemistry, The Australian National University, Australia

Lipid Modification by Enzymes and Engineered Microbes. Uwe T. Bornscheuer, *University of Greiswald, Germany*

Recent Progress of Enzymatic Synthesis of Polymers. Douglas G. Hayes, *University of Tennessee, USA*

Tuesday Afternoon

BIO 3: PUFA Biotechnology

Chairs: Suk Hoo Yoon, Woosuk University, Korea; and Tsunehiro Aki, Hiroshima University, Japan

Lipase-catalyzed Butanolysis of Echium Oil for the Selective Enrichment in Gamma-linolenic and Stearidonic Acids. Marta C. Corzo-Martinez¹, Eduardo López², Luis C. Vazquez¹, Elena Ortego², Erika Olaya², Guillermo Reglero¹, and Carlos Torres^{*1}, ¹University Autonoma of Madrid, Spain; ²Department of Production and Characterization of Novel Foods, Institute of Food Science Research (CIAL,CSIC-UAM), Spain

Efficiency Improvement in the Enzymatic Fractionation of PUFA. Yomi Watanabe¹, Ryosuke Hoshina², Kazumi Katagiri², and Hideaki Kobayashi², ¹Osaka Research Institute of Industrial Science and Technology, Japan; ²Kewpie Corporation, Japan

Engineering *Yarrowia lipolytica* for the Production of Fatty Alcohols from Sugars and Fats. Michael Spagnuolo, Murtaza Shabbir Hussain, and Mark Blenner^{*}, *Clemson University, USA*

Production of Various PUFAs by filamentous fungus *Mortierella alpina*. Eiji Sakuradani^{*1}, Akinori Ando², Sakayu Shimizu³, and Jun Ogawa², ¹Tokushima Univ, Japan; ²Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan; ³Kyoto Univ, Japan

Practical Eicosapentaenoic Acid (EPA) Production by *Mortierella alpina* Molecular Breeding under Ordinary Temperature. Akinori Ando^{*1}, Yuki Takemoto², Ryohei Nakatsuji³, Shigeru Hiramoto⁴, Eiji Sakuradani⁵, and Jun Ogawa¹, ¹Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan; ²Nisshin Pharma Inc., Japan; ³Kyoto University, Japan; ⁴Nisshin Pharma Inc.; ⁵Tokushima Univ, Japan

Metabolic Engineering for Rare PUFA Production by an Oil-producing Fungus *Mortierella alpina*. Hiroshi Kikukawa^{*1}, Eiji Sakuradani², Akinori Ando³, Sakayu Shimizu⁴, and Jun Ogawa³, ¹Gifu university, Japan; ²Tokushima Univ, Japan; ³Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan; ⁴Kyoto Univ, Japan

Lipase-polymer nanoconjugates for biosynthesis in non-aqueous media: Synthesis and Characterization. Bianca Perez¹, Ana Moles², Jannik Pedersen², Steen V. Petersen², Jan Skov S. Pedersen³, Adam Perriman⁴, and Zheng Guo², ¹Dept. of Engineering, Aarhus University, Denmark; ²Aarhus University, Denmark; ³Interdisciplinary Nanoscience Center, Aarhus University, Denmark; ⁴School of Cellular and Molecular Medicine, Bristol University, UK

Extraction and Refining of Lipids Containing Arachidonic Acid from Single Cell Oil, *Mortierella* sp. Suk Hoo Yoon, *Woosuk University, Korea*

BIO 3.1 / PRO 3.1: Biodiesel

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

Online Real-time Quality Control of Biodiesel using Near-Infrared Spectroscopy. Dominik Margraf, *BUCHI NIR-Online GmbH, Germany*

FFA Reduction and Production Control. Frankie Mathis and Bo Munk, *Tactical Fabrication LLC, USA*

Integrating Conventional and Enzymatic Approaches Towards Industrial Biodiesel Production. Marcelo Cantele, *Tranfertech Gestão de Inovações LTDA, Brazil*

Enzymatic Esterification to Handle the FFA in Biodiesel Production. Per Munk Nielsen, *Novozymes, Denmark*

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

A New Enzymatic Biodiesel Polishing Process Based on Esterification of FFA into Methyl Esters. Anders Rancke-Madsen, *Novozymes, Denmark*

Soapstock Acidulation using Carbon Dioxide. Rusty Sutterlin, *Inventure Renewables, USA*

Wednesday Morning

BIO 4: Plant and Algae Lipid Biotechnology and Genomics

Chairs: Jay Shockey, SRRC-ARS-USDA, USA; and Timothy Durrett, Kansas State University, USA

Genome Editing and Plant Agriculture. Daniel Voytas, *University of Minnesota, USA*

Improving the World's Nutrition with Next Generation Canola Oils. Lorin R. Debonte, Xinmin Deng, Richard Fletcher, Kristin P. Monser-Gray*, Diliara Iassonova, and Willie Loh, *Cargill Inc., USA*

Generation and Characterization of Multiple Mutated Oilseeds via CRISPR Cas9 Genome Editing. Jay Shockey, Catherine Mason, and Tien Thuy Vuong, *USDA, ARS, SRRC, USA*

CRISPR-Cas9 Genome Editing to Alter Oil Production in the Hexaploid Oilseed Crop *Camelina sativa*. Jose A. Aznar-Moreno and Timothy P. Durrett, *Kansas State University, USA*

Advancing Genomic Solutions in Algae Biofuels and Bioproducts. Eric R. Moellering, *Synthetic Genomics, Inc., USA*

Molecular Breeding Tools for Rapid Conversion of Cover Crop Pennycress into a Novel Oilseed Crop. Tim Ulmasov, *Arvegenix, USA*

Employing Synthetic Biology Approaches to Facilitate Value-added Oil Production in the Oilseed Cover Crop Pennycress. John Sedbrook¹, Michaela McGinn¹, Malihe Esfahanian¹, Sunil Bansal², Brice Jarvis¹, Taylor Suo¹, Tara Nazarenus³, M. David Marks⁴, Ed Cahoon⁵, and Timothy P. Durrett², ¹*Illinois State*

University, USA; ²Kansas State University, USA; ³University of Nebraska, USA; ⁴University of Minnesota, USA; ⁵University of Nebraska-Lincoln, USA

Glycolytic Genes Influences Mesocarp Oil Content in Oil Palm. Jaime Y.S. Low¹, Nurliyana Y.S. Ruzlan², Noor Azizah Musa³, Ai-Ling Ong³, David R. Appleton¹, Fook Tim Chew⁴, Hirzun M. Yusof², and Harikrishna Kulaveerasingam⁵, ¹Biotechnology & Breeding Department, Sime Darby Plantation R&D Centre, Malaysia; ²Sime Darby Renewables, Sime Darby Plantation Sdn Bhd, Malaysia; ³Biotechnology & Breeding Department, Sime Darby Plantation R&D Centre; ⁴Department of Biological Sciences, National University of Singapore, Singapore; ⁵Sime Darby Plantation R&D Centre, Malaysia

Recapitulation of Triacylglycerol Biosynthesis Pathways to Increase Hydroxy-Fatty Acid Accumulation. Daniel Lunn, James Wallis, and John Browse, Washington State University, USA

BIO 4.1 / S&D 4.1: Biosurfactants and Additives

Chairs: Daniel Solaiman, USDA, ARS, ERRC, USA; and George Smith, Huntsman Corporation, USA

Glycolipid Biosurfactants: Characteristic Curvature and Applications in Microemulsions and Emulsions. Zheng Xue, Dennis Parrish, Eric Theiner, Khalil Yacoub, Andras Nagy¹ and Terrence Everson, Evonik Corporation, USA;

Glucamide Surfactants: Structural and Interfacial Aspects. Brajesh Jha, Colgate Palmolive, USA

NMR Investigation of the Effect of pH on Micelle Formation by an Amino Acid-based Surfactant. Kevin F. Morris¹, Gabriel Rothbauer¹, Elisabeth Rutter¹, Chelsea Reuter-Seng¹, Simon Vera², Eugene Billiot², Yayin Fang³, and Fereshteh Billiot², ¹Carthage College, USA; ²Texas A&M Corpus Christi, USA; ³Howard University, USA

Effects of Rhamnolipid on Phagotrophic Algae as Sensitive Ecologically Important Model Organism. Krutika Invally, Suo Xiao, and Lu-Kwang Ju*, University of Akron, USA

Application of Sophorolipids in Control of Food Pathogens. Daniel K.Y. Solaiman, Richard D. Ashby, Xuetong Fan, and Modesto Olanya, USDA, ARS, ERRC, USA

The Stability of Nanoemulsions and Emulsions Containing Cinnamaldehyde and Biosurfactants, and their Antimicrobial Performance against Escherichia. coli O157:H7 and Listeria Monocytogenes. Kangzi Ren and Buddhi Lamsal, Iowa State University, USA

Unique Characteristics of Sophorolipid, Yeast Glycolipid Biosurfactants, and its Application as Eco-friendly Bio-detergents. Yoshihiko Hirata, Glen Lelyn Quan, Michiaki Araki, and Mizuyuki Ryu, Saraya, Japan

Applisurf: Functionality Driven Design and Synthesis of New-to-Nature Glycolipid Biosurfactants. Sophie L.K.W. Roelants¹, Sofie Demaeseneire², and Wim Soetaert³, ¹Bio Base Europe Pilot Plant, Belgium; ²Ghent University, Belgium; ³Centre for Industrial Biotechnology and Biocatalysis (InBio.be), Ghent University, Belgium

Next Generation Castor Oil Ethoxylates. Ollie James, Dustin Landry, Liam McMillan, and George Smith, Sasol North America, USA

Wednesday Afternoon

BIO 5: General Biotechnology

Chairs: Byung Hee Kim, Sookmyung Women's University, Korea; and Shigenobu Kishino, Kyoto University, Japan

Comparison of Three Methods for Analyses of Triacylglycerols in Cocoa Butter Alternatives. Jun Jin, Qingzhe Jin, and Xingguo Wang, *Jiangnan University, China*

Enzymatic Processing Methods to Reduce Saturated Fat Content of Oils. Matthew A. Robinson, *Dow AgroSciences, USA*

Optimizing Oil Production by *Mucor circinelloides* using Cheese Whey Permeate. Juliana M. Leite Nobrega de Moura Bell, Lauryn Chan, Josh Cohen, Gulustan Ozturk, Marie Hennebelle, and Ameer Taha, *University of California, Davis, USA*

Effect of Interesterification on the Physicochemical Profiles of Rice Bran Wax-based Modified Fats. Zhen Zhang¹, Huihua Huang², and Yong Wang³, ¹*South China University of Technology, China*; ²*School of Food Science and Engineering, South China University of Technology, China*; ³*Jinan University, China*

Substrate Preference of Long Chain acyl-CoA Synthetase for Hydroxy-Fatty Acids. Jesse D. Bengtsson, and John Browse, *Washington State University, USA*

Effective Enrichment of Palmitoleic Acid from Seabuckthorn Oil by Combining Different Methods. Nakyung Choi¹, Ju Yeon Chung¹, Heejin Kim², and In-Hwan Kim¹, ¹*Korea University, Republic of Korea*; ²*Dept. of Public Health Sciences, Graduate School, Korea University, Republic of Korea*

Synthesis of 2-docosaheptaenoylglycerol by Enzymatic Ethanolysis. Yu Zhang, Xiaosan Wang, Shuo Zou, Qingzhe Jin, and Xingguo Wang, *Jiangnan University, China*

Preparation of Diisononyl Adipate via Lipase-catalyzed Esterification in a Solvent-free system. Aree Lee^{*1}, Heejin Kim², and In-Hwan Kim¹, ¹*Korea University, Republic of Korea*; ²*Dept. of Public Health Sciences, Graduate School, Korea University, Republic of Korea*

BIO-P: Biotechnology Poster Session

Chairs: Byung Hee Kim, Sookmyung Women's University, Korea; and Shigenobu Kishino, Kyoto University, Japan

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

Sequential Liquefaction of *Nicotiana tabacum* Stems Biomass by Crude Polyhydric Alcohols for the Production of Polyols and Rigid Polyurethane Foams. Chiragkumar M. Patel, *Industrial Chemistry Dept., V. P. & R. P. T. P. Science College, India*

Dendritic Nanomolecules as Drug Carriers: Solubilization, Sustained Release and Biocompatibility Study. Ravindra V. Movliya and Pravinkumar M. Patel, *V. P. & R. P. T. P. Sc. College, India*

An Effective Method for Deacidification of High-acid Rice Bran Oil by Enzymatic Amidation. Xingguo Wang and Xiaosan Wang^{*}, *Jiangnan University, China*

An Integrated Multi-omics Study on Lipid Turnover of *Schizochytrium* sp. S31 Cultured on Glycerol. Ming Chang^{*1}, Tao Zhang¹, Ruijie Liu², Qingzhe Jin¹, and Xingguo Wang¹, ¹*Jiangnan University, China*; ²*Jiangnan university, China*

Optimization of Fungal Stimulation and Processing Parameters to Maximize Glyceollin Production in Soybeans. Stephanie A. Wootton¹, Bishnu Karki², Mark Berhow³, and William Gibbons¹, ¹*South Dakota State University, USA*; ²*Dept. of Biology and Microbiology, South Dakota State University, USA*; ³*USDA National Center for Agricultural Utilization Research, USA*

Fungal Fermentation of De-Hulled Ground Barley to Increase Protein Levels. Burgandy R. Roberts¹, Bishnu Karki², Jacob Zahler¹, and William Gibbons¹, ¹*South Dakota State University, USA*; ²*Dept. of Biology and Microbiology, South Dakota State University, USA*

Isoflavone Phosphate Synthetase from *Bacillus subtilis* BCRC80517. Chen Hsu¹ and Nan-Wei Su², ¹*National Taiwan University, Department of Agricultural Chemistry, Taiwan*; ²*National Taiwan University, Taiwan*