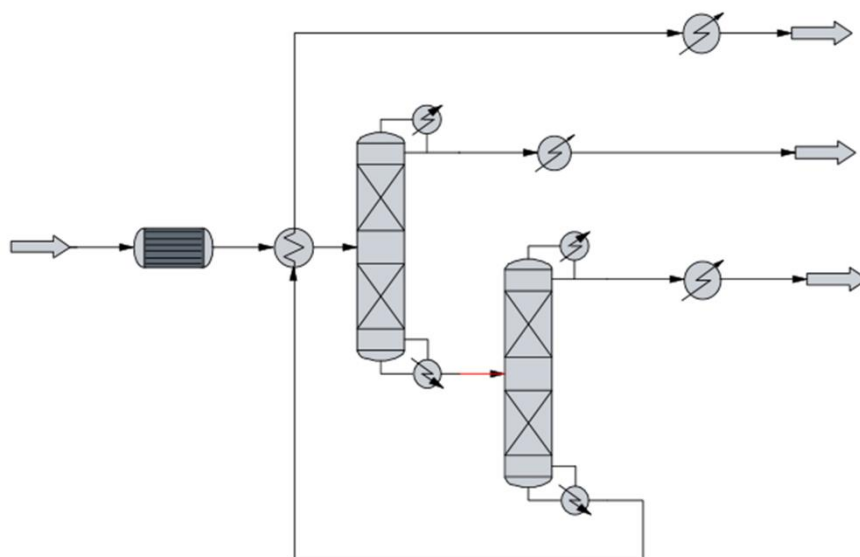


2019 UC Chemical Engineering **Senior Design Exposition**

April 11, 2019, 5:00 – 7:00 pm
Fourth Floor,
Engineering Research Center



Sponsored by:

Department of Chemical and Environmental Engineering
American Institute of Chemical Engineers
Ohio Valley Section

2019 PROJECTS

Biodiesel and Glycerin

1901: Production of Biodiesel from Palm Oil by Reactive Distillation – Maddie Bell, Ben Harnen, Emma Mullins, Ray Recchia, Brennan Schilling

1902: A Solvent-Free Approach to Extract the Lipid Fraction from Sewer Grease for Biodiesel Production (Faculty sponsor: Dr. Mingming Lu) – Nathan Bryant, Keeley Cromer, Mack Rixe, Matt Stollmer, Cora Weisenbach

1903: Crude Glycerol Fermentation by Oleaginous Red Yeast To Sunflower Oil And Beta-Carotenes – Mitchell Beerse, Christopher Bunder, Andrew Cornelius, Adam Kluesener, Ryan Lohbeck

1904: Pyrolysis of Crude Glycerin in the Presence of Cu-ZSM-5 Catalyst for the Production of Aromatic Compounds – Andy Droesch, Nathan Hamit, Jim Ohler, Nathan Tiffany

1905: Use of Glycerin as a Feedstock to Produce Renewable Fuel Gas – Michael Chauby, Joshua Keuper, Alex McGlasson, John Nurre, Cayley Severino

1906: Production of Triacetin by Reactive Distillation – Annie Dolphin, Alyssa Fuls, John Miller, Colleen Platten, Heidi Van Valkenburgh

1907: Production of Distilled Monoglycerides from Biodiesel Byproduct Glycerol and Soybean Oil – Taylor Byndon, Ben Edwards, Sam Green, Kevin Koesters, Rickey Terrell

1908: Production of Glycerol Carbonate – Justin Gels, Evan Merk, Daniel Patterson, Ryan Stoffel, Emily Strochinsky

Renewably Resourced Processes

1909: Diablo Canyon SWRO Desalination Plant Design (Student-proposed project) – Brian McCarthy, Timothy Steele, Casey Warren, Daniel Williams, Samuel Willis

1910: Reuse of Spent Coffee Grounds to Produce Biodiesel and Glycerin (Faculty Sponsor: Dr. Mingming Lu) – Russell McClure, Dat Nguyen, Christine Santabarbara, Noah Skinner, Christopher Stone

1911: Conversion of Landfill Gas into Syngas through the Dry Reformation of Methane and Carbon Dioxide – William Littell, Nicholas McManis, Michael Mueller, Grant Slovan, Jasmin Truong

Power Cycles, CO₂ Capture, and CO₂ Utilization

1912: Carbon Dioxide Capture from Ambient Air Utilizing Cooling Towers – Joshua Dietrich, Levi Ping, Nicholas Keil, Nicholas Kiser

1913: Carbon Negative Direct Air Capture of CO₂ – Jacob Fields, Emma Lowe, Christian Meyer, and Zachary Woellert

1914: Power Generation using a Solar-Driven Sulfur Cycle – Mitchell Dance, Ryan Hellmann, Nicholas Kelble, Nicholas Oslin, Austin Porter, Alex Rutkowski

1915: Power Generation using a Sulfur Combined Cycle Process – Alexander Bailey, William Gannon, Mitchell Muha, Tim Rapking, Samantha Shelby

1916: Oxygen and Synthetic Natural Gas Production by Alkaline Water Electrolysis – Cody Biehle, Greg Brusman, Mary DiGiovenale, Lisa Schweder, Lauren Starrett, Peter Weisbrod

1917: Direct Synthesis of Dimethyl Carbonate – Cameron Roesel, Thomas McSwigan, Nathan Smith, Mathis Terrier, Kuzivakwashe Nyika-Makore

1918: Production of Syngas from Ohio Coals Using Chemical Looping (Faculty Sponsor: Dr. Panagiotis Smirniotis) – Nicholette Guy, Marek Johnson, Kyle Petitjean, Amani Russell, Jonah Stepaniak, Patrick Sullivan

1919: Production of Oxygenates from Syngas Generated from Ohio Coal (Faculty Sponsor: Dr. Panagiotis Smirniotis) – Robert Naber, Josh McCarty, John Lang, Parker Bozman, Cody Harris, Bennett Herbert

Chemical Intermediates

1923: A Greener Synthesis of Methyl Methacrylate (Student-proposed project) – Tom Burns, Kohl Banas, Karim Mansari, Justin VonErden, Jacob Neumann

Waste Reclamation

1924: Phosphogypsum Process – Ruiyuan Luan, Omar Khan, Kareem Elgafy, Jyoti Sapkota

1926: Acidic Leaching of Zinc from Argon Oxygen Decarburization Steelmaking Dust – Benjamin Loren, Robert Meadows, Joseph Herrmann, Justin Cathers

1927: Conversion of Plastic Waste to Liquid Fuels (Student-proposed project) –

Hannah Carson, Rachel Hautman, Karen Hildebrant, Ryan Muir, Nhu Hao Tran

1928: Functionalizing High Surface Area Silica with MPTMS for FGD Wastewater Treatment (Student-proposed project//Faculty sponsor: Dr. Vadim Gulians) – Christian Donovan, Jay Park, Jamie Routzong, Chloe Tran, Kyle Vallance

1929: Craft Beer Waste Minimization (Student-proposed project) – Jacob Bittner, Phoebe Fransen, Naomi Hardin, Holly Willard

1930: Supercritical CO₂ Extraction of Rare Earth Elements From Industrial Fly Ash – Nazar Pavlushyn, Yiran Xu, Jinqi Liu, Zach Merrilees