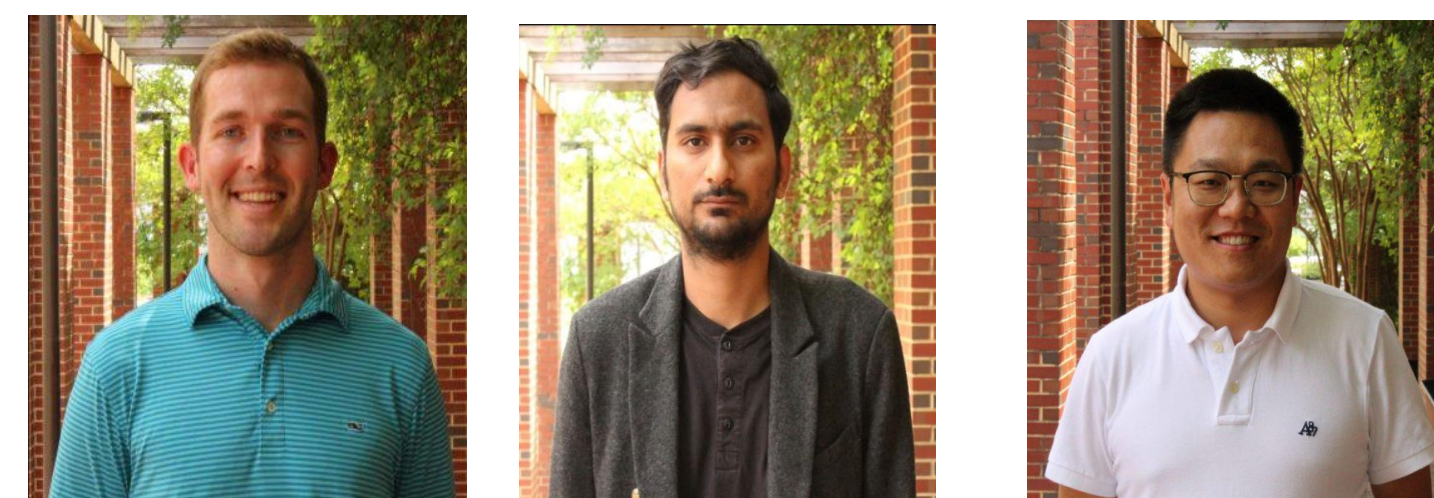


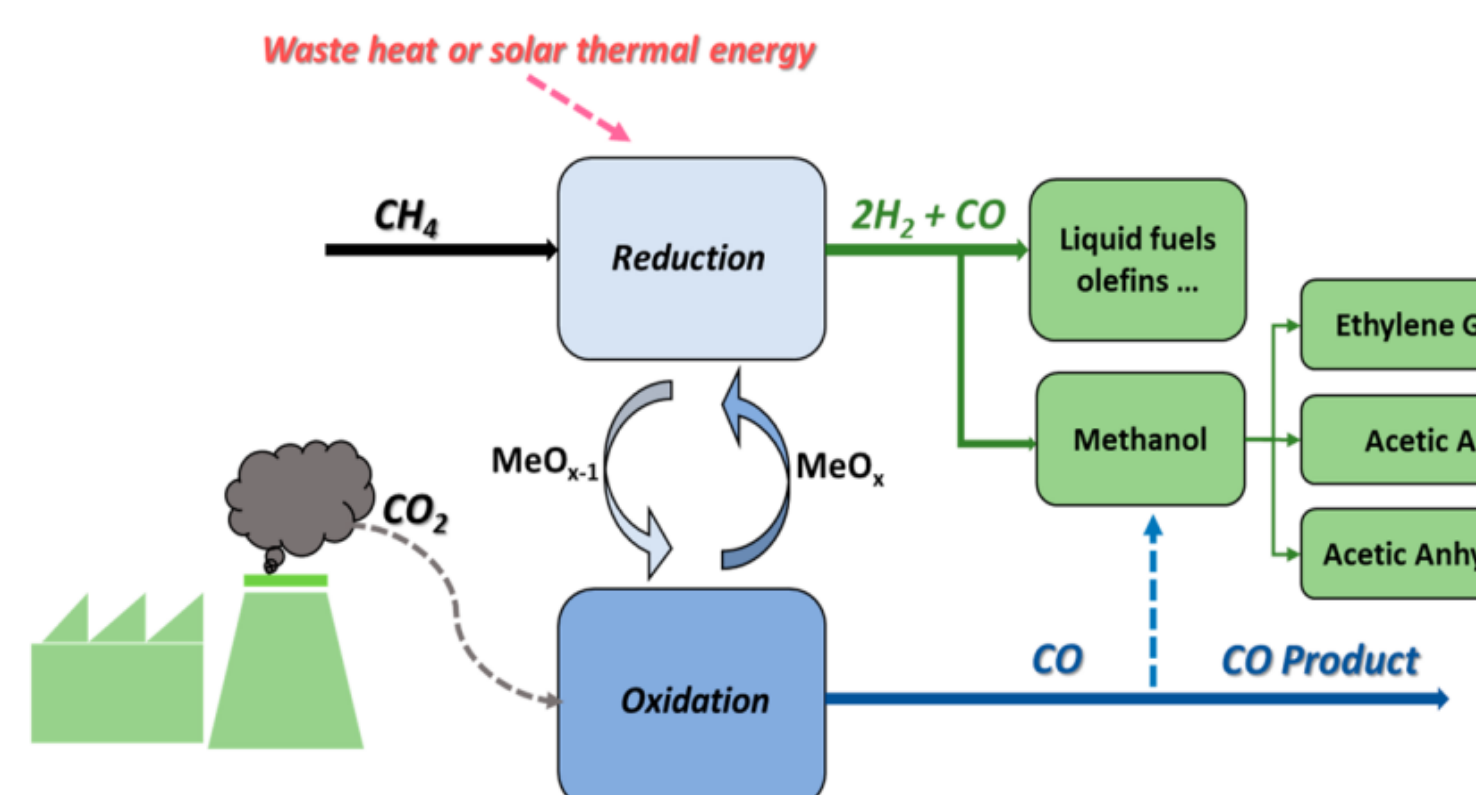
"Here at the Li Research Group, we focus on the **design, synthesis, and characterization of nanomaterial-based catalyst and reagent particles** for biomass and fossil energy conversions, green liquid fuel synthesis, CO₂ capture, and pollutant control. Our research also encompasses **chemical reaction engineering and process synthesis and optimization**. Density Functional Theory (DFT) based methods are also used to elucidate the particle reaction mechanisms and to identify potential ways to improve particle performance."

– Fanxing Li, Alcoa Professor & University Faculty Scholar

Chemical Looping Dry Reforming for Sustainable Syngas Production



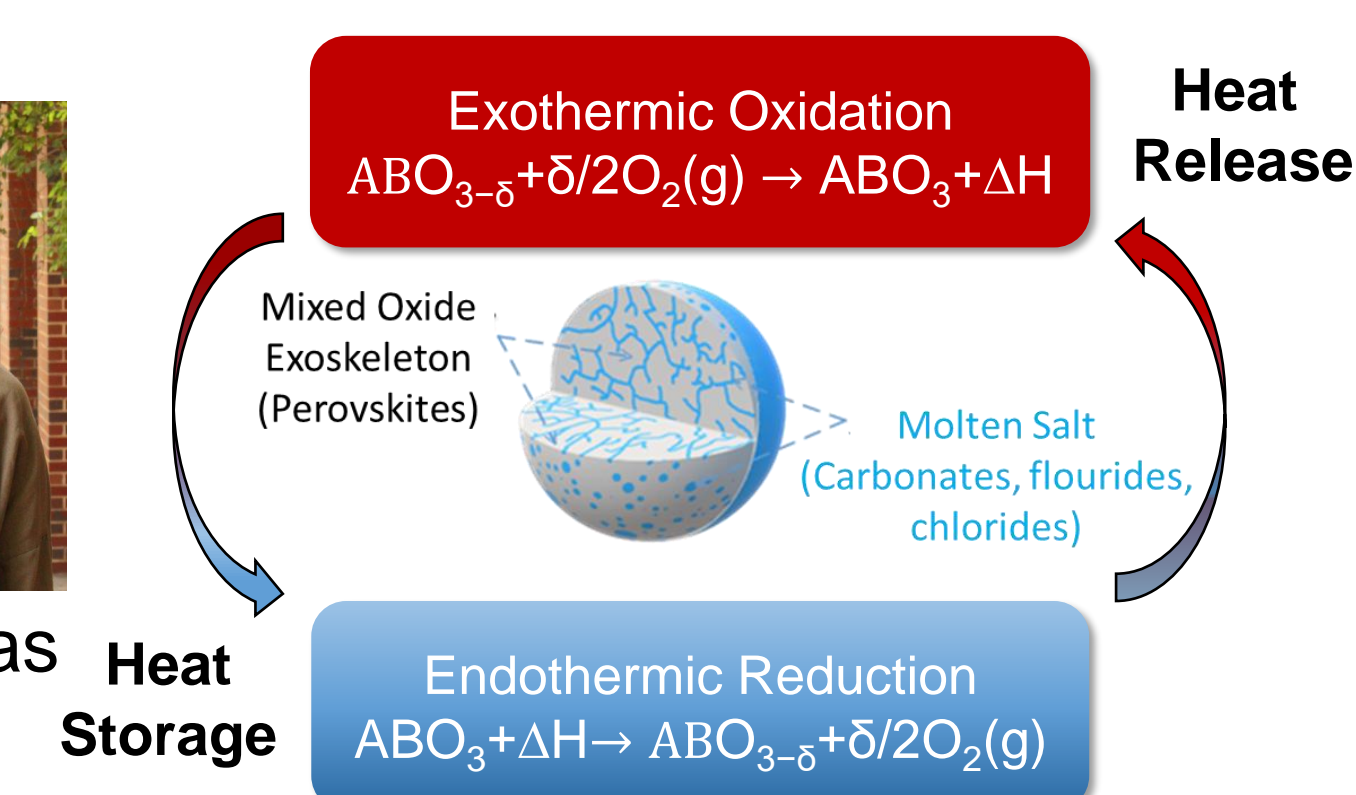
Will Martin Sherafghan Iftikhar Chongyan Ruan



Thermochemical Looping Energy-Storage



Hilal Bektas

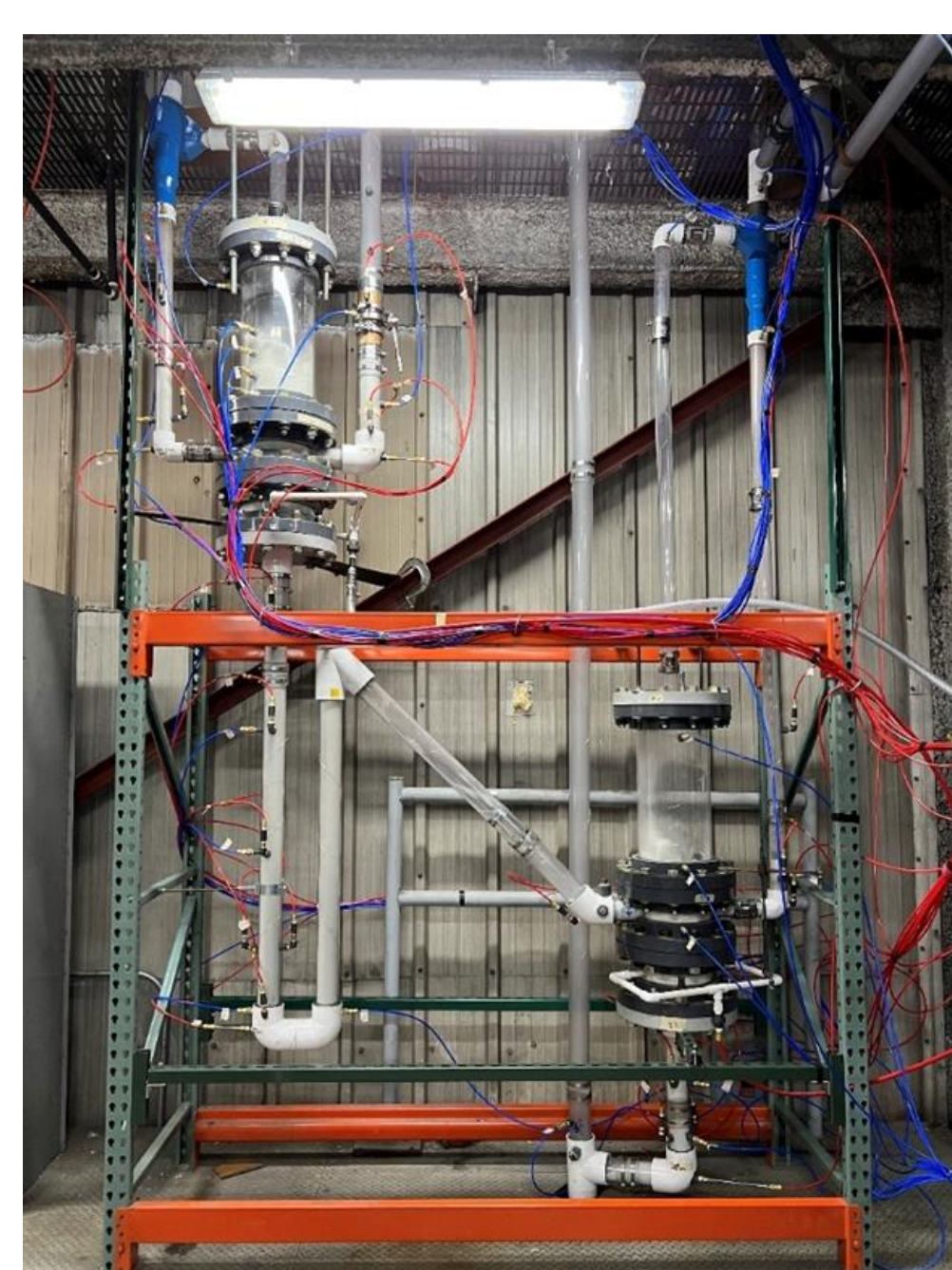


Pilot-Scale Reactor Demonstrations

Super-equilibrium Reformer

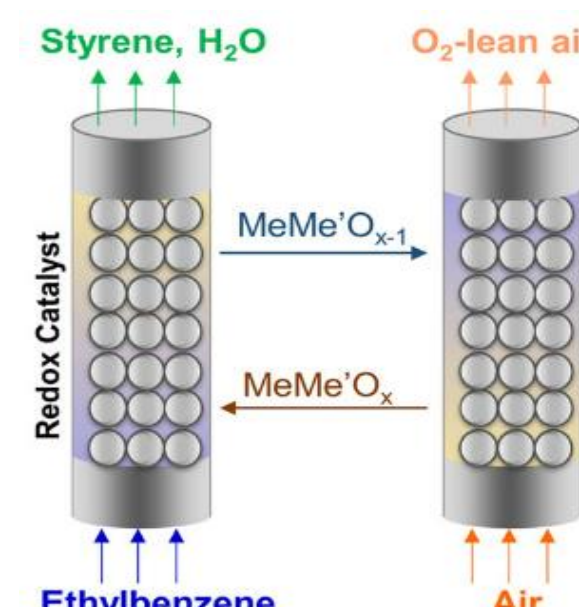


Dual Fluidized Bed Reactor



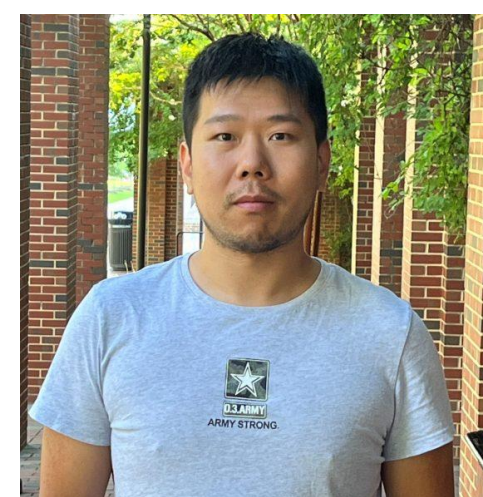
Chemical Looping Oxidative Dehydrogenation

CL-ODH of Alkylbenzene Compounds

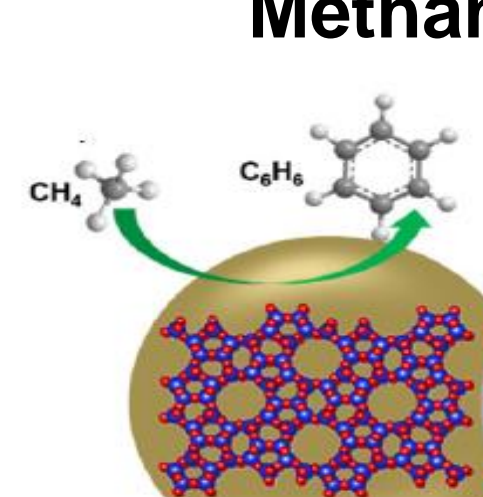


Aaron Frye

Oxidative Coupling and Dehydroaromatization of Methane



Baitang Jin



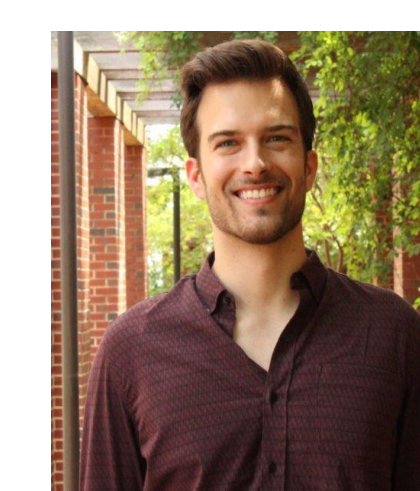
Ibrahim Sultan

Chemical Looping for Carbon Capture and Utilization

Molten Salt-Mediated Ethane ODH with Integrated CO₂ Capture

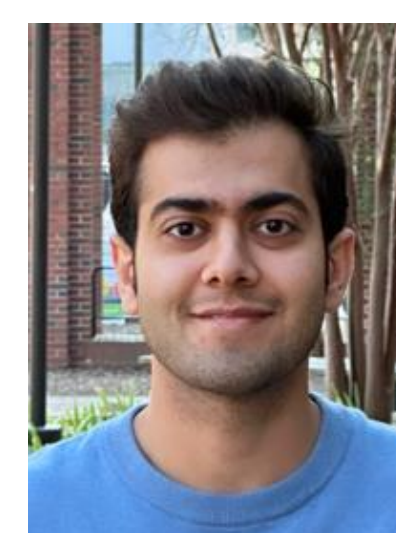
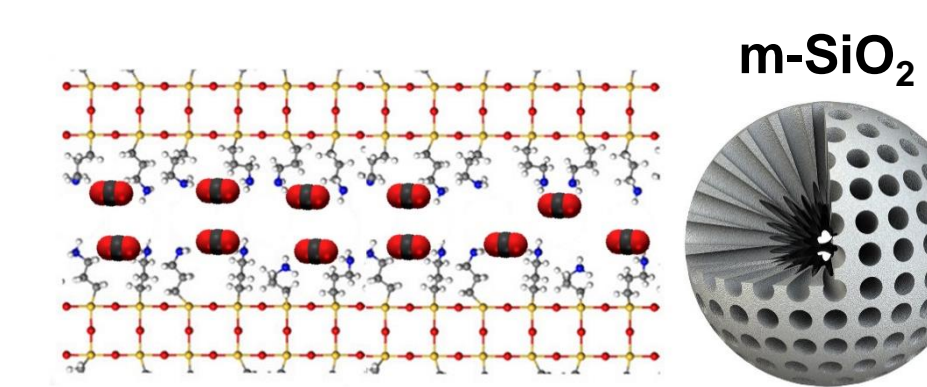


Dennis Chacko

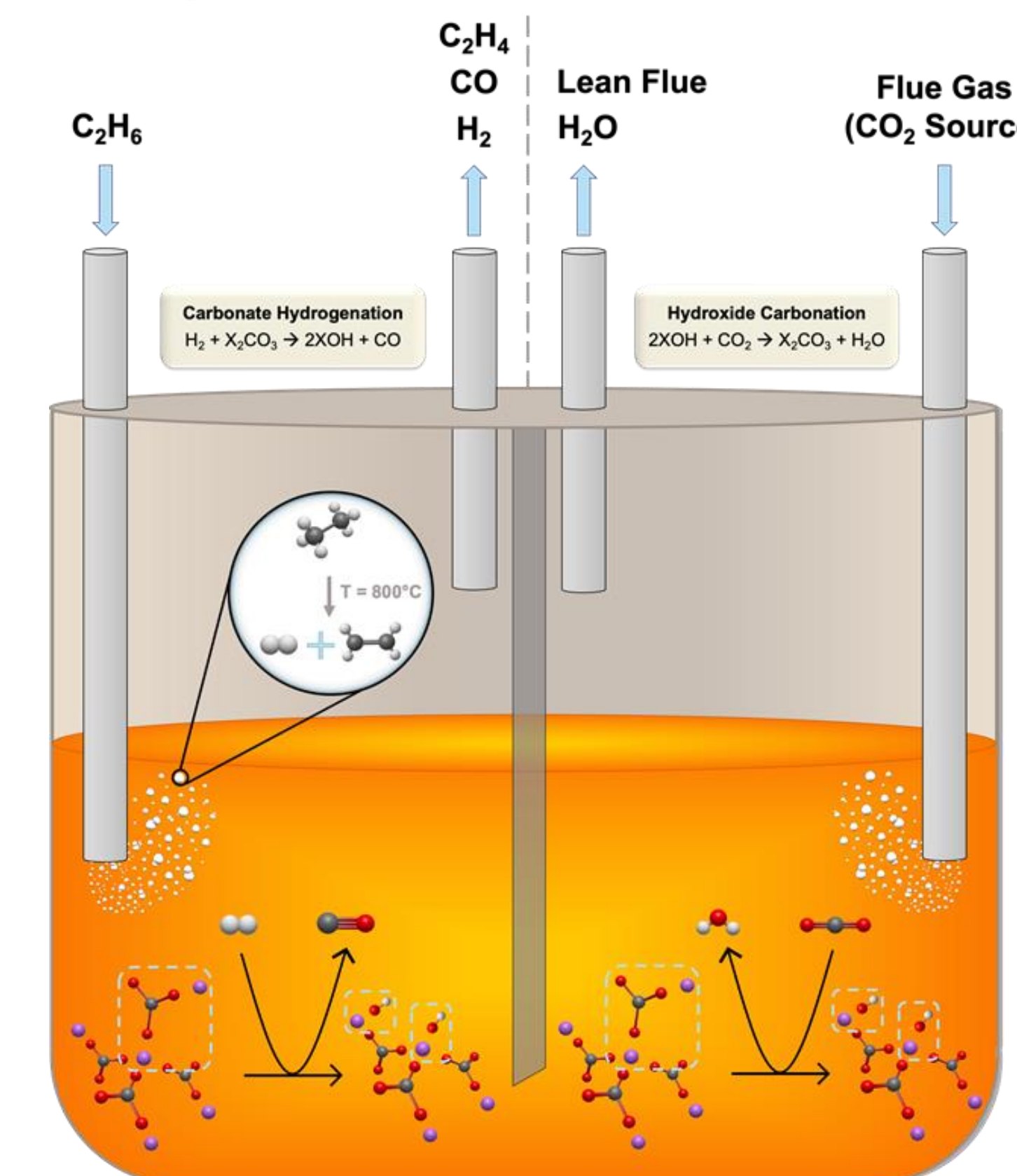


Kyle Vogt-Lowell

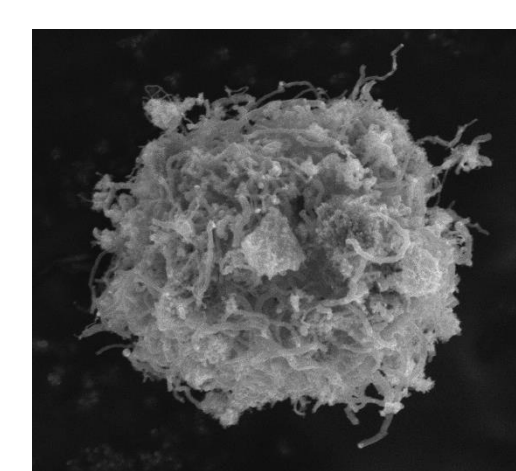
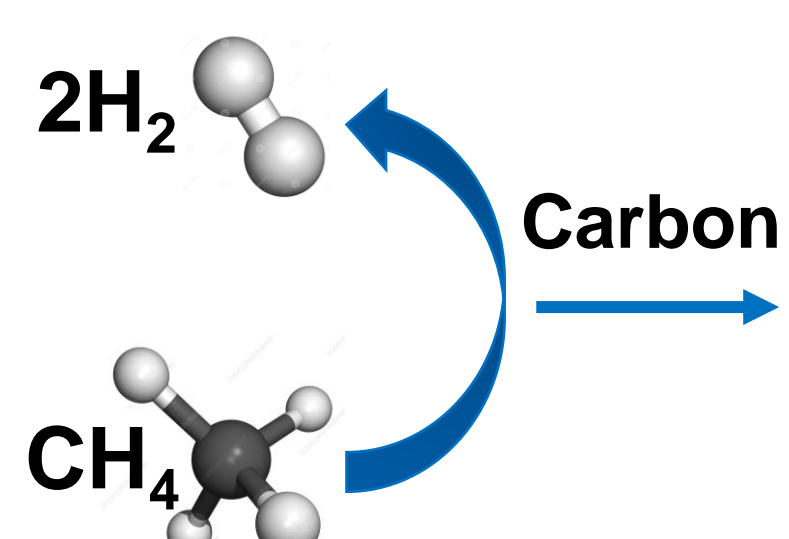
Direct CO₂ Capture From Ambient Air



Seyedamin Razavi



Methane Pyrolysis for Hydrogen and Carbon Nanotube Production



Sherafghan Iftikhar



Sam Portillo

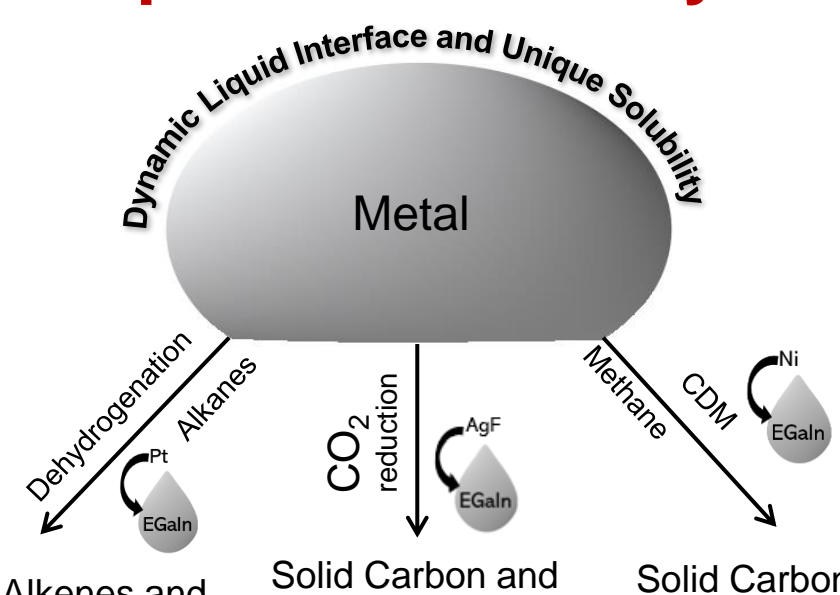


Mohammedreza Kosari

Liquid Metal Catalysis



Micah Dickens



Biomass Conversion for Renewable Hydrogen and Fuels Production

Sorption-Enhanced Oxidative Steam Reforming

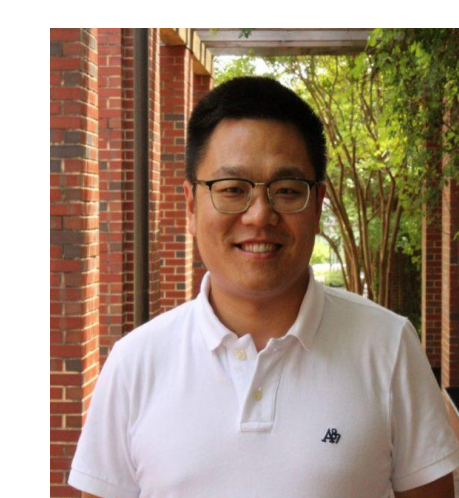


Leo Brody

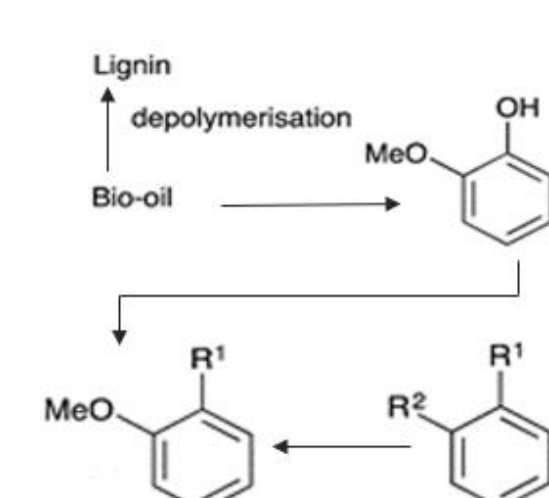
Mahe Rukh

Casey Killmer

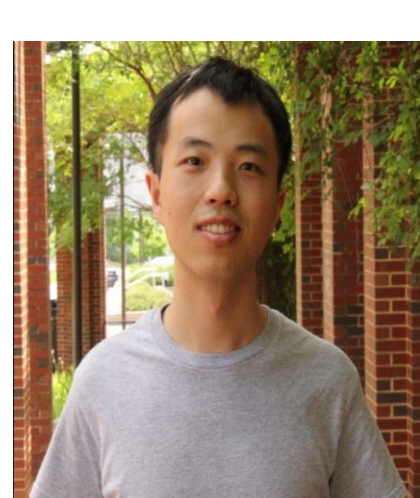
Hydrodeoxygenation of Bio-oils



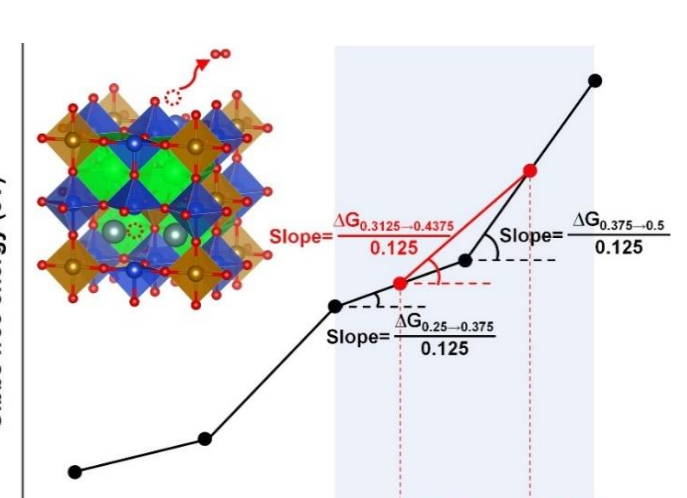
Chongyan Ruan



Density Functional Theory



Kunran Yang



Where We Publish

- ACS Catalysis
- ACS Sustainable Chemistry and Engineering
- Advanced Energy Materials
- AICHE Journal
- Applied Catalysis B: Environmental
- Applied Energy
- Biotechnology Progress
- Catalysis Science and Technology
- Catalysis Today
- Carbon
- ChemCatChem
- ChemSusChem
- Chemical Engineering Journal
- Chemical Engineering Science
- Chemistry of Materials
- Current Opinion in Chemical Engineering
- Energy
- Energy and Environmental Science
- Energy and Fuel
- The Journal of Chemical Physics
- Energy Technology
- Environmental Science and Technology
- Fuel
- Fuel Processing Technology
- IScience
- International Journal of Hydrogen Energy
- Industrial and Engineering Chemistry Research
- Journal of Advanced Manufacturing Processing
- Journal of Catalysis
- Journal of Cleaner Production
- Journal of Material Chemistry A
- Journal of Physics: Energy
- Journal of Vacuum Science Technology
- Nano Energy
- Nature Communications
- Physical Chemistry Chemical Physics
- RCS Advances
- Science Advances

Funders:



Who employs us:

