

#	POSTER TITLE	PRESENTER	PI(S)
THRUST 4 - PROCESS SYNTHESIS AND DESIGN, LIFE CYCLE ANALYSIS AND ENVIRONMENTAL IMPACT			
T4P1: Process Synthesis, Economic Evaluation and Modeling of the Components for the Entire CISTAR Process			
1	Co-Storage Of H ₂ and Battery for Decarbonized Liquid Fuel Production Processes with On-Site Renewable Power Plants	Shuaikang Will Du (PU)	Agrawal
2	Global Optimization of MVR-Heat Pump Assisted Multi-component Distillation Systems	Akash Nogaja (PU)	Agrawal
T4P9: Synergistic Process Synthesis and Economic Evaluation of Shale and Renewable Resource			
3	Introducing Electric Cracking Towers (E-CRATOS) for Ethylene Production	Edwin Rodríguez (PU)	Agrawal
T4P10: Decarbonization of Alkane Dehydrogenation Reactors through Renewable Electric Heating			
4	Simulation of Steam Methane Reformer for Electrification Through Induction Heating	Yufei Zhao (PU)	Masuku
T4P11: Electrified Heat Exchanger Network Design, Synthesis, and Operation			
5	Electrified Heat Exchanger Network Design and Synthesis	Kaiyu Cao (PU)	Can Li
T4P12: Shale Gas Field Development Planning Under Production Profile Uncertainty			
6	Multi-period Shale Gas Field Development Planning Under Production Uncertainty	Zedong Peng (PU)	Neira
THRUST 7 - SYSTEMS-LEVEL DECARBONIZATION AND ANALYSIS FOR FUELS AND CHEMICALS			
T7P2: CISTAR Fuel in an Evolving Energy Landscape			
7	Opportunities in Reducing Greenhouse Gas Emissions through Hydrogen Blending in Industrial Process Heating	Qining Wang (NU)	Dunn
T7P5: Distributed Manufacturing for Electrified Chemical Processes in a Microgrid			
8	Distributed Manufacturing for Electrified Chemical Processes in a Microgrid	Asha Ramanujam (PU)	Can Li
THRUST 1 - DEHYDROGENATION			
T1P3: Regenerable, Thermally Stable Alkane Dehydrogenation Catalysts			
9	Calcium Additives Enhance Coke Migration and Catalyst Stability for Pt-based Catalysts in Ethane Dehydrogenation	Joanna Rosenberger (PU)	Ch. Li
10	First Principles Analysis of Coke Formation on Pt-based Catalysts for Propane Dehydrogenation	Yu-Hsiang Cheng (PU)	Greeley
11	Investigating Side Product Formation in Colloidal Platinum Alloy Synthesis for Stable Catalysis	Nkem Azuka (PU)	Ch. Li
12	Novel Strategies for Achieving Stability and Regenerability in Pt-Alloy Catalysts for Propane Dehydrogenation	Ryan Alcalá (UNM)	Datye
T1P5: Non-Thermal Plasma-Assisted Alkane Dehydrogenation and Coupling			
13	Use of Kinetic Modeling to Probe the Chemical Opportunities in a Nonthermal Ethane Plasma	Denver Haycock (UND)	Schneider
14	Low-Temperature Olefin/Liquid Production and Coke Mitigation in Light Alkane Plasmas	Russell Clarke (UND)	Hicks
THRUST 2 - OLIGOMERIZATION			
T2P1: Brønsted Acid-Catalyzed Olefin Oligomerization			
15	Investigating the Influence of Structure-Directing Agents on Aluminum Distribution in MFI Zeolite Catalysts	Sarah Gustafson (PU)	Gounder
16	Exploring the Origins of Catalytic Diversity Among Acid Zeolites with Varying Local Active Site Environments	Bereket T. Bekele (PU)	Gounder
17	Assessing the Influence of Brønsted Acid Site Location in MFI Zeolites on Propene Oligomerization Rates and Selectivity	Diamarys Salome Rivera (PU)	Gounder
18	Effect of Silanol Defects Spatial Distribution on the Diffusivity of Alkanes in MFI Zeolites	Ricem Diaz Arroyo (PU)	Gounder
19	Investigating the Role of Hydride Transfer During Ethene Oligomerization on H- and Ca-Modified Zeolites	Bonn Cao (PU)	Gounder

20	Assessment of Diffusion Properties in MFI Zeolites for Propene Oligomerization Reaction	Kaila Durden (REM, NCAT)*	Gounder
21	Kinetic Modeling of Ethylene Oligomerization on H-BEA Catalyst	Sai Praneet Batchu (NU)	Broadbelt
T2P4: Oligomerization Catalyzed by Transition Metals Based on Non-Zeolites			
22	Understanding Ni Active Site Properties and Stability During Ethene Oligomerization in the Presence of Intrapore Liquids	Christian Borrero Villabol (PU)	Gounder
23	Computational Comparison of Zeolite and Polyoxometallate Hosts for Ni-Catalyzed Ethylene Oligomerization	Michael Appoh (UND)	Schneider
24	Single Nickel Sites Isolated on Polyoxometalates for Light Olefin Oligomerization	Alba Scotto d'Apollonia (UND)	Hicks
T2P5: Non-Thermal C-C Bond Coupling to Various Products			
25	Decarbonization of Chemicals Production via Electrochemical CO ₂ Coupling with Additives	Xiao Kun Lu and Andrew Weidner (NU)	Seitz

THRUST 3 - C1 ACTIVATION

T3P4: Methane Activation via Electrochemical Methods

26	Chemical Stability Characterization for Active E-OCM Barium Niobate Perovskites	Luke Denoyer (UNM)	Garzon
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T3P5: Dehydroaromatization of Light Alkanes

27	Convert Ethane to Aromatics by PtMn + ZSM-5 Bi-functional Catalyst	Shan Jiang (PU)	Miller
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T3P6: Methane Dehydroaromatization

28	Structural Evolution of Mo-Zeolites during Methane Dehydroaromatization Reaction-Regeneration Cycles	Ángel Santiago-Colón (PU)	Gounder
29	Identification and Evolution of Active Sites in Isomorphously Substituted Fe-ZSM-5 Catalysts for Methane Dehydroaromatization (MDA)	Xinrui Zhang (NU)	Notestein, Marks
30	Non-selective Deactivation of Mo/H-ZSM5 under Methane Dehydroaromatization Conditions	Jordy Ramos-Yataco (NU)	Notestein

T3P7: Electrochemical CO₂ Reduction to Multi-carbon Products using Single Atom Alloys

31	Integrating Electrocatalytic CO ₂ Reduction into Renewable Energy Systems	Shashwati da Cunha (UTA)	Resasco
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T3P8: CO₂ Capture and Electrochemical Reduction in Azolide Ionic Liquids

32	The Role of Organic Cations for the Electrochemical Reduction of CO ₂ in Aprotic Solvents	Jon-Marc McGregor (UTA)	Resasco, Brennecke
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T3P9: Carbon-Based Catalysts for Non-Oxidative Coupling of Methane

33	Active Carbon Deposits from Non-Oxidative Coupling of CH ₄ : A First-Principles Analysis	Luke Nunzio Pretzie (PU)	Greeley
34	Identifying Carbon Structure Effects on Non-oxidative Coupling of Methane Rates and Selectivity	Justin Rosa Rojas (PU)	Gounder
35	Synthesis of Zeolite-Based Materials for Non-Oxidative Conversion of Methane (NOCM)	Mahagani Lasciers (REM, NCAT)*	Gounder

TECHNOLOGY MODULES

Reactor Oligomerization Technology Module

37	High-Conversion Propylene Oligomerization on CISTAR-Developed Catalyst	Evan Sowinski (PU)	Ribeiro
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Reactor Dehydrogenation Technology Module

38	Propane Dehydrogenation: Comparison of CISTAR Catalysts	Evan Sowinski (PU)	Ribeiro
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THRUST 6 - MEMBRANE SEPARATIONS

T6P2: Ceramic/Metal Hybrid Membranes for High Temperature H₂ Separations

39	Investigating Silica Films and Coatings for Coke Mitigation in a High Temperature CMR	Isabel Ibarra (UNM)	Brinker
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T6P3: Light Paraffin Separations with Reverse Selective Membranes			
40	Improving the Pressure-Stability of Supported Ionic Liquid Membranes (SILMs) for the Fractionation of Light Paraffins	Justin J. Rosenthal (UTA)	Freeman/ Brennecke
T6P4: Microporous Polymer Membranes for CISTAR Gas Separations			
41	Microporous Iptycene-based Polybenzoxazole Membranes for H ₂ /Alkane Separations	Agboola Suleiman (UND)	Guo
T6P6: Ligand Protected Clusters Embedded in Polymer Membranes for Olefin-Paraffin Separation			
42	Aging Mitigation of Amine Modified PIM-1 for Highly Selective Propylene/Propane Separation	Bo Wei Cynthia Chen (UND)	O'Brien
T6P7: Engineering Tough Polymer Membranes via Sacrificial Bonds			
43	Engineering Mechanically Tough Membranes for Olefin/Paraffin Separations	Tiffany Jeng (UTA)	Sanoja

C2C PROJECTS

C2C-1: Electrochemical Conversion of Methane			
44	Perovskite Thin Films Deposited via Pulsed Laser Deposition for High Temperature Electrochemical Stability Measurements	Luke Denoyer (UNM)	Garzon, Ferlauto, Fonseca
C2C-2: Development of In-operando Synchrotron Characterization Tools			
45	Solid Solution-Derived Active Ruthenium from Lanthanum Chromite for Efficient Ethanol Steam Reforming	Tamara S. Moraes (USP)	Dean, Miller, Ferlauto, Datye, Fonseca
C2C-3: Computational Materials Science to Enhance Stability and Reactivity of Alkane Conversion			
46	Exploring Surface Structures of Pt ₃ Mn Alloys: A Comprehensive Analysis through Cluster Expansion Methodology	Anik Biswas (PU)	Greeley, Silva
C2C-4: Tandem Conversion of Natural Gas Liquids (NGL) and CO₂			
47	CO ₂ -assisted Ethane Aromatization over Cobalt-based Catalysts	Jordy Ramos-Yataco (NU)	Notestein, Assaf, Alves
C2C-5: Undersea Separation of CO₂ from Natural Gas			
48	High Pressure Gas Separation Technology for the Removal of CO ₂ from Natural Gas	Mariam Balogun (UTA)	Brennecke
C2C-6: Integrated Process Synthesis and Life Cycle Assessment			
49	Sustainable Aviation Fuels (SAF) from Ethanol: An Integrated Systems Modeling Approach	Madelynn Watson (UND)	Dowling
C2C-7: Conversion of Greenhouse Gases Using Single Atom Catalysts			
50	Ni Single Atom Catalysts for Selective Redox Reactions	Brandon Burnside (UNM)	Datye