

#	POSTER TITLE	PRESENTER	PI(S)
<b>THRUST 4 - PROCESS SYNTHESIS AND DESIGN, LIFE CYCLE ANALYSIS AND ENVIRONMENTAL IMPACT</b>			
<b>T4P1: Process Synthesis, Economic Evaluation and Modeling of the Components for the Entire CISTAR Process</b>			
1	Storage Strategy for Large Scale Chemical Plant Powered by Renewable Energy	Will Shuaikang Du (PU)	Agrawal
2	Setting Performance Targets For Membranes vis-à-vis Cryogenic Distillation For Ethylene-Ethane Separation	Will Shuaikang Du (PU)	Agrawal
<b>T4P8: Multi-Scale Modeling for Reactor Design and Optimization</b>			
3	Multi-Scale Equation-Oriented Optimization with Embedded Micro-Kinetic Information	Damian T. Agi (UND)	Dowling
<b>T4P9: Synergistic Process Synthesis and Economic Evaluation of Shale and Renewable Resource</b>			
4	Integrating CISTAR Processes with Chemical Manufacturing	Qining Chen, Qining Wang (UTA)	Allen, Dunn
5	Re-Imagining Ethylene Production	Edwin Rodriguez (PU)	Agrawal
<b>T4P10: Decarbonization of Alkane Dehydrogenation Reactors through Renewable Electric Heating</b>			
6	Validation of Electrified Steam Methane Reforming (E-SMR) Model	Yufei Zhao (PU)	Masuku
<b>T4P11: Electrified Heat Exchanger Network Design, Synthesis, and Operation</b>			
7	Electrified Heat Exchanger Network Design and Synthesis	Kaiyu Cao (PU)	Can Li
<b>T4P12: Shale Gas Field Development Planning Under Production Profile Uncertainty</b>			
8	Shale Gas Field Development Planning Under Production Profile Uncertainty	Zedong Peng (PU)	Neira
<b>THRUST 7 - SYSTEMS-LEVEL DECARBONIZATION AND ANALYSIS FOR FUELS AND CHEMICALS</b>			
<b>T7P5: Distributed Manufacturing for Electrified Chemical Processes in a Microgrid</b>			
9	Distributed Manufacturing for Electrified Chemical Processes in a Microgrid	Asha Ramanujam (PU)	Can Li
<b>THRUST 1 - DEHYDROGENATION</b>			
<b>T1P3: Regenerable, Thermally Stable Alkane Dehydrogenation Catalysts</b>			
10	Exploring Mechanisms of Coke Formation and Migration for Increased Catalyst Stability	Joanna Rosenberger (PU)	Ch. Li
11	Synthesis of Colloidal Platinum Alloys for Stable Alkane Dehydrogenation	Nkem Azuka (PU)	Ch. Li
12	Strategies to Mitigate Coke Formation and Buildup with Soft Oxidants in SITU During Propane Dehydrogenation	Ryan Alcala (UNM)	Datye
<b>T1P5: Non-Thermal Plasma-Assisted Alkane Dehydrogenation and Coupling</b>			
13	Kinetics and Speciation of Ethane Decomposition in a Non-Thermal Plasma	Denver Haycock (UND)	Schneider
14	Low-Temperature Olefin/Liquid Production and Coke Suppression in Light Alkane Plasmas	Russell Clarke (UND)	Hicks
<b>THRUST 2 - OLIGOMERIZATION</b>			
<b>T2P1: Brønsted Acid-Catalyzed Olefin Oligomerization</b>			
15	Isolating Kinetic Effects of Void Environment in MFI Zeolites on Transport-Limited Propene Oligomerization	Diamarys Salome Rivera (PU)	Gounder
16	Catalytic Reactor Modelling for Propene Oligomerization in Bronsted-acid Zeolites	Sai Praneet Batchu (NU)	Broadbelt
17	Heterogeneous Distribution of Acid-site Regulates Diffusional Constraints Governing Propene Oligomerization Deactivation	Ricem Diaz Arroyo (PU)	Gounder
<b>T2P4: Oligomerization Catalyzed by Transition Metals Based on Non-Zeolites</b>			
18	Effects of Ethene Pressure on the Deactivation of Nickel Active Sites Exchanged on Porous Aluminosilicate Materials During Ethene Oligomerization	Christian Borrero Villabol (PU)	Gounder
19	Tuning the Structure of Polyoxometalates to Improve Accessibility of Nickel Sites for Ethene Oligomerization	Alba Scotto d'Apollonia (UND)	Hicks
20	Computational Exploration of the Catalytic Activity of Single Site Polyoxometalates for Oligomerization Reactions	Michael Appoh (UND)	Schneider

### THRUST 3 - C1 ACTIVATION

#### T3P5: Dehydroaromatization of Light Alkanes

21	Ethane Dehydroaromatization on PtMn/SiO <sub>2</sub> + ZSM-5 Bifunctional Catalyst	Shan Jiang (PU)	Miller
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#### T3P6: Methane Dehydroaromatization

22	Consequences of the Structural Evolution of Mo-Zeolites for Methane DHA Reaction-Regeneration Cycles	Ángel Santiago-Colón (PU)	Gounder
23	Overcoated Mo-Catalysts under Methane Dehydroaromatization Conditions	Jordy Ramos-Yataco (NU)	Notestein
24	One-Pot Construction of Fe-ZSM-5 Zeolites with High MDA Activity and No Induction Period	Xinrui Zhang (NU)	Notestein, Marks

#### T3P7: Electrochemical CO<sub>2</sub> Reduction to Multi-carbon Products using Single Atom Alloys

25	Integrating CO <sub>2</sub> Electrolyzers into Energy Systems	Shashwati da Cunha (UTA)	Resasco
26	Understanding the Activity and Stability of Bimetallic Cu Catalysts for CO <sub>2</sub> R	Joel Graves (UTA)	Resasco

#### T3P8: CO<sub>2</sub> capture and Electrochemical Reduction in Azolide Ionic Liquids

27	Understanding the Role of Organic Cations for Electrochemical CO <sub>2</sub> Reduction in Aprotic Medium	Jon-Marc McGregor (UTA)	Resasco, Brennecke
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#### T3P9: Carbon-Based Catalysts for Non-Oxidative Coupling of Methane

28	CH <sub>4</sub> Activation over Graphene Defect Models: A First-Principles Analysis	Luke Nunzio Pretzie (PU)	Greeley
29	Evaluating Carbon-Based Catalysts for the Non-Oxidative Coupling of Methane	Justin Rosa-Rojas (PU)	Gounder

### TECHNOLOGY MODULES

#### Advanced Membrane Separations Technology Module

30	Advanced Membrane Separations Technology Module	Maggie Tangqiumei Song (UTA)	Brennecke
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#### Reactor Oligomerization Technology Module

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

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

#### T6P1: Supported Ionic Liquid Membranes (SILMs) for Olefin/Paraffin Separations

33	Scalable and Hydrogen-Stable Thin Film Composite Membranes for Olefin/Paraffin Separations	Matt Davenport (UTA)	Brennecke, Freeman
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#### T6P2: Ceramic/Metal Hybrid Membranes for High Temperature H<sub>2</sub> Separations

34	Strategies for Mitigating Membrane Fouling via Coke Formation During PDH in a Catalytic Membrane Reactor	Isabel Ibarra (UNM)	Brinker
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#### T6P3: Light Paraffin Separations with Reverse Selective Membranes

35	Improving the Pressure-Stability of SILMs for the Fractionation of Light Paraffins	Justin J. Rosenthal (UTA)	Freeman, Brennecke
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#### T6P4: Microporous Polymer Membranes for CISTAR Gas Separations

36	Microporous Iptycene-based Polybenzoxazole Membranes for H <sub>2</sub> /Alkane Separations	Agboola Suleiman (UND)	Guo
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#### T6P6: Ligand Protected Clusters Embedded in Polymer Membranes for Olefin-Paraffin Separation

37	Olefin/Paraffin Separation Performance of Amine-modified PIM-1 Membrane	Bo Wei Cynthia Chen (UND)	O'Brien
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#### T6P7: Engineering Tough Polymer Membranes via Sacrificial Bonds

38	Engineering Mechanically Tough Poly(ethylene oxide) Membranes for Olefin/Paraffin Separations	Tiffany Jeng (UTA)	Sanoja
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### C2C PROJECTS

#### C2C-1: Electrochemical Conversion of Methane

39	Novel Perovskite Oxide Characterization and Stability Investigated via Pulsed Laser Deposition of Thin Films	Luke Denoyer (UNM)	Garzon
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**C2C-3: Computational Materials Science to Enhance Stability and Reactivity of Alkane Conversion**

40	Investigation of Pt3Mn Surface Structures for Propane Dehydrogenation Using Cluster Expansion Approach	Anik Biswas (PU)	Greeley
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**C2C-5: Undersea Separation of CO<sub>2</sub> from Natural Gas**

41	High Pressure Gas Separation Technology for the Removal of CO <sub>2</sub> from Natural Gas	Mariam Balogun (UTA)	Brennecke
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**C2C-6: Integrated Process Synthesis and Life Cycle Assessment**

42	A Risk-Conscious Optimization Model for Sustainable Aviation Fuel Production in the Brazilian Sugarcane Industry	Madelynn Watson (UND)	Dowling
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**C2C-7: Conversion of Greenhouse Gases Using Single Atom Catalysts**

43	Single Atom Ni Catalysts for Converting CO <sub>2</sub> & CH <sub>4</sub> to Fuels and Chemicals	Brandon Burnside (UNM)	Datye
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