



Title of Session: Advances/Innovations in Chemical Reaction Engineering I

Session Chairs: Götz Vesper (University of Pittsburgh), Johannes Khinast (Rutgers University) and Kyu Yong Choi (University of Maryland)

Date: Monday, 2/5/2007 Venue: Salon B

| Abstract ID # | Time | Title of Paper, Presenters, and Affiliations | Poster Number |
|---------------|-------------|--|---------------|
| 41 | 8:15 - 8:27 | Multiscale model-based process engineering: Application to portable and decentralized power generation (keynote, 12 min. presentation) Dion Vlachos (Univ. of Delaware, Oral Presenter) Dion Vlachos (Univ. of Delaware, Poster Presenter) | M1 |
| 53 | 8:27 - 8:39 | Analysis, Reduction and Representation of Complex Reaction Mechanisms (keynote, 12 min. presentation) Ioannis Androulakis (Rutgers University, Oral Presenter) Ioannis Androulakis (Rutgers University, Poster Presenter) | M2 |
| 19 | 8:39 - 8:45 | An Advanced Gas-Solid Flow Engineering Model for Fluidized Bed Reactor System (6 min. presentation) Deming Mao (The Dow Chemical Company, Oral Presenter) Deming Mao (The Dow Chemical Company, Poster Presenter) | M3 |
| 28 | 8:45 - 8:51 | 3D Simulation of Wall Catalyst particles Using CFD (6 min. presentation) Anthony G. Dixon (Professor, Oral Presenter) M. Ertan Taskin (Grad. Student, Poster Presenter) | M4 |
| 114 | 8:57 - 9:03 | CFD Simulation of Gas-Solids Dispersion in a Circulating Fluidized Bed Downer Reactor (6 min. presentation) Shantanu Roy (Dept of Chemical Engineering, Oral Presenter) S. Vaishali (Dept of Chemical Engineering, Poster Presenter) | M6 |
| 150 | 9:03 - 9:09 | Liquid-phase Oxidation of Cyclohexane-Modeling and Experimental Results (6 min. presentation) Milorad Dudukovic (Washington University in St. Louis, Oral Presenter) Radmila Jevtic (Washington University in St. Louis, Poster Presenter) | M7 |

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| 24 | 9:18 - 9:30 | Pulsed compression: advanced technology for high temperature, high pressure processes (keynote, 12 min. presentation) Alexander Kronberg (Energy Conversion Technologies B.V., Oral Presenter) Maxim Glouchenkov (Energy Conversion Technologies B.V., Poster Presenter) | M8 |
| 70 | 9:30 - 9:36 | Automatic Continuous Online Monitoring of Polymerization reactions(ACOMP) - a new tool in polymer characterization (6 min. presentation) Alina Alb (Tulane University, Oral Presenter) Alina Alb (Tulane University, Poster Presenter) | M9 |
| 143 | 9:36 - 9:42 | Polymer Hydrogenation by Reactive Extrusion- Pulsed and Continuous Flow Systems (6 min. presentation) Kerry Dooley (Louisiana State University, Oral Presenter) Alan Bussard (Louisiana State University, Poster Presenter) | M10 |
| 144 | 9:42 - 9:48 | Kinetics and polymer morphology in homogeneous and heterogeneous polymerization of styrene to syndiotactic polymer in bulk and confined geometry (6 min. presentation) Kyu Yong Choi (University of Maryland, Oral Presenter) Kyu Yong Choi (University of Maryland, Poster Presenter) | M11 |
| 108 | 9:48 - 9:54 | Control of Reaction Injection Moulding process with RIMcop® technology (6 min. presentation) Paulo A. Quadros (Fluidinova, Engenharia de Fluidos S.A., Oral Presenter) Paulo A. Quadros (Fluidinova, Engenharia de Fluidos S.A., Poster Presenter) | M12 |
| 112 | 9:54 - 10:00 | Diffuse Optical Process Tomography in Multiphase Gas-Liquid Flows: Simulation of Light Propagation and Image Reconstruction (6 min. presentation) Patrick Mills (Texas A&M University-Kingsville, Oral Presenter) Patrick Mills (Texas A&M University-Kingsville, Poster Presenter) | M13 |



Title of Session: Environmental Reaction Engineering

Session Chairs: Michael Harold (University of Houston) and Robert Farrauto (BASF Catalysts)

Date: Monday, 2/5/2007 Venue: Salon A

| Abstract ID # | Time | Title of Paper, Presenters, and Affiliations | Poster Number |
|---------------|----------------|--|---------------|
| 20 | 8:15 - 8:27 | Mechanistic and kinetic study of the NO/NO₂-NH₃ SCR reaction over a V-based catalyst for Diesel exhaust after treatment (keynote, 12 min. presentation) Enrico Tronconi (Politecnico di Milano, Oral Presenter) Enrico Tronconi (Politecnico di Milano, Poster Presenter) | M18 |
| 142 | 8:27 - 8:33 | Fleet Tool™: Techno-Economic Modeling to Identify Cost-Effective Fleet Modifications Required by Environmental Regulations (6 min. presentation) Robert Weber (TIAX LLC, Oral Presenter) Robert Weber (TIAX LLC, Poster Presenter) | M19 |
| 34 | 8:33 - 8:39 | Estimating the Temperatures of the Precious Metal Sites and NO_x Storage Sites in a Lean NO_x Trap during Oxidation Reactions (6 min. presentation) Joseph Theis (Ford Motor Company, Oral Presenter) Joseph Theis (Ford Motor Company, Poster Presenter) | M20 |
| 44 | 8:39 - 8:45 | Kinetic Measurements and Modeling on Lean NO_x Traps (6 min. presentation) Fabio Ribeiro (Purdue University, Oral Presenter) Shadab Mulla (Purdue University, Poster Presenter) | M21 |
| 141 | 8:45 - 8:51 | Ammonia Formation During Steady-State and Cyclic Operation of a NO_x Trap with H₂ as the Reductant (6 min. presentation) Vemuri Balakotaiah (University of Houston, Oral Presenter) Robert Clayton (University of Houston, Poster Presenter) | M22 |
| 54 | 8:51 - 8:57 | DE-COUPLING PARAMETERS AFFECTING THE OXIDATION OF DIESEL PARTICULATE MATTER (6 min. presentation) William Epling (University of Waterloo, Oral Presenter) | M24 |

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| | | William Epling (University of Waterloo, Poster Presenter) | |
| 133 | 8:57 - 9:03 | Active Regeneration of Diesel Particulate Filter Employing Microwave Heating (6 min. presentation) Thomas Ho (Lamar University, Oral Presenter) Tae Hoon Kim (Lamar University, Poster Presenter) | M25 |
| 101 | 9:03 - 9:09 | Novel Pt-alloy Fuel cell cathode catalyst (6 min. presentation) Peter Strasser (University of Houston, Oral Presenter) Ratndeeep Srivastava (University of Houston, Poster Presenter) | M26 |
| 153 | 9:18 - 9:24 | Surface Exchange Enhancement of Oxygen Transport through MIEC Membranes (6 min. presentation) Kirk Gerdes (University of Houston, Oral Presenter) Kirk Gerdes (University of Houston, Poster Presenter) | M27 |
| 105 | 9:24 - 9:30 | Engineering Aspects of Hydroformylation in Supercritical Carbon Dioxide (6 min. presentation) Florian Patcas (Karlsruhe Research Center, Institute of Techn, Oral Presenter) Constantin Maniut (Karlsruhe Research Center, Institute of Techn, Poster Presenter) | M28 |
| 149 | 9:30 - 9:36 | Transport Studies in Solid Acid Alkylation Processes (6 min. presentation) Milorad Dudukovic (Washington University, Oral Presenter) Subramanya Nayak (Washington University, Poster Presenter) | M29 |
| 117 | 9:36 - 9:42 | Enhanced Fe-assisted Photocatalytic Mineralization of Phenol and other Hydroxylated compounds: Reaction Network and Kinetic Modelling. (6 min. presentation) Hugo de Lasa (University of Western Ontario, Oral Presenter) Aaron Ortiz-Gomez (University of Western Ontario, Poster Presenter) | M31 |
| 102 | | Fluidized bed reactor system with TiO₂-coated activated carbon-treatment of the WWTP effluent- (poster only) Dong-Keun Lee (Gyeongsang National University, Poster Presenter) | M30 |
| 100 | | Kinetic Modeling of Decomposition of Urea Solution Used in Selective Non-Catalytic Reduction (SNCR) of Nitrogen Oxides (poster only) Rajasree R. (Research Professor, Poster Presenter) | M33 |



Title of Session: Advances/Innovations in Chemical Reaction Engineering II

Session Chairs: Götz Vesper (University of Pittsburgh), Johannes Khinast (Rutgers University) and Kyu Yong Choi (University of Maryland)

Date: Tuesday, 2/6/2007 Venue: Salon B

| Abstract ID # | Time | Title of Paper, Presenters, and Affiliations | Poster Number |
|---------------|----------------|--|---------------|
| 86 | 8:15 - 8:27 | Hydrogen Generation and Purification in High Temperature Hollow Fiber Pd Membrane Reactor (keynote, 12 min. presentation) Michael Harold (University of Houston, Oral Presenter) Sameer Israni (University of Houston, Poster Presenter) | T1 |
| 107 | 8:27 - 8:39 | Spatially-Resolved Temperature and Species Profiles in Millisecond Reactors: Catalytic Partial Oxidation of Methane and Ethane (6 min. presentation) Lanny Schmidt (Department of Chemical Engineering and Materi, Oral Presenter) Nick Degenstein (Department of Chemical Engineering and Materi, Poster Presenter) | T2 |
| 78 | 8:39 - 8:45 | Inert Membrane Reactor for Partial Oxidation Reactions: Propane and Propylene (6 min. presentation) Eduardo Wolf (University of Notre Dame, Oral Presenter) Christopher O'Neill (University of Notre Dame, Poster Presenter) | T3 |
| 45 | 8:45 - 8:51 | A HYBRID ADSORBENT-MEMBRANE REACTOR (HAMR) SYSTEM FOR HYDROGEN PRODUCTION (6 min. presentation) Theodore Tsotsis (University of Southern California, Oral Presenter) Theodore Tsotsis (University of Southern California, Poster Presenter) | T4 |

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| 9 | 8:51 - 8:57 | Competitive to steam cracking oxidation of propane and n-butane on novel, cobalt oxynitride catalyst (6 min. presentation) Mark Kaliya (Ben Gurion University of the Negev, Oral Presenter) Mark Kaliya (Ben Gurion University of the Negev, Poster Presenter) | T5 |
| 89 | 8:57 - 9:03 | Engineering Scalability – Extending High Throughput Technologies to Chemical Process Development (6 min. presentation) Mark Willis (Newcastle University, Oral Presenter) Robert Worth (Newcastle University, Poster Presenter) | T6 |
| 145 | 9:03 - 9:09 | Kinetic Modeling of Homogeneous 1-Octene Hydroformylation in CO₂-Expanded Solvent (6 min. presentation) Bala Subramaniam (University of Kansas, Oral Presenter) Debangshu Guha (Washington University, Poster Presenter) | T7 |
| 93 | 9:18 - 9:30 | Hierarchically Structured Porous Catalysts – Optimization Studies and What They Mean for Practical Catalyst Design (keynote, 12 min. presentation) Marc-Olivier Coppens (Rensselaer Polytechnic Institute, Oral Presenter) Marc-Olivier Coppens (Rensselaer Polytechnic Institute, Poster Presenter) | T8 |
| 83 | 9:30 - 9:36 | Propane Aromatization on ZSM-5 Based Catalysts (6 min. presentation) W. Nicholas Delgass (Purdue University, Oral Presenter) Gowri Krishnamurthy (Purdue University, Poster Presenter) | T10 |
| 90 | 9:36 - 9:42 | Using Test Reactions for Primary Screening of Industrially Relevant Processes. (6 min. presentation) L. A. Baumes (Universidad Politécnica de Valencia, Oral Presenter) P. Serna (Universidad Politécnica de Valencia, Poster Presenter) | T9 |
| 16 | 9:42 - 9:48 | Novel Synthesis of Submicron Complex Oxides (6 min. presentation) Karen Martirosyan (Dept. of Chem. Eng. University of Houston, Oral Presenter) Karen Martirosyan (Dept. of Chem. Eng. University of Houston, Poster Presenter) | T12 |
| 155 | 9:48 - 9:54 | Smart Functionalized Materials for Multistep Catalysis (6 min. presentation) J. Khinast (Rutgers University, Oral Presenter) J. Khinast (Rutgers University, Poster Presenter) | T11 |

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| 48 | 9:54 - 10:00 | Evaluation of low pressure drop carriers in the oxidation of carbon monoxide (6 min. presentation) Florina Corina Patcas (Institute of Chemical Process Engineering (CV, Oral Presenter)) Florina Corina Patcas (Institute of Chemical Process Engineering (CV, Poster Presenter)) | T14 |
| 156 | | Nanostructured Materials for High-Temperature Catalytic Applications (poster only) G. Vesper (University of Pittsburgh, Poster Presenter) | T13 |



Title of Session: Advances in Kinetic and Mechanistic Modeling

Session Chairs: Gilbert Froment (Texas A&M University) and Teh Ho (ExxonMobil)

Date: Tuesday, 2/6/2007 Venue: Salon A

| Abstract ID # | Time | Title of Paper, Presenters, and Affiliations | Poster Number |
|---------------|-------------|---|---------------|
| 8 | 8:15 - 8:27 | Microstructured reactors - New tools in chemical product research and process development (keynote, 12 min. presentation) Jaap C. Schouten (Eindhoven University of Technology, Oral Presenter) Jaap C. Schouten (Eindhoven University of Technology, Poster Presenter) | T17 |
| 84 | 8:27 - 8:39 | A comprehensive DFT study of nitrous oxide decomposition over Fe-ZSM-5, and binuclear oxygen bridged iron sites in Fe-ZSM-5 in the presence and absence of nitric oxide (keynote, 12 min. presentation) Frerich Keil (Hamburg Univ Technology, Oral Presenter) Frerich Keil (Hamburg Univ Technology, Poster Presenter) | T18 |
| 15 | 8:39 - 8:51 | Molecule-Based Kinetic Modeling of Heavy Oil Conversion: Tools and Approaches (keynote, 12 min. presentation) Michael Klein (Rutgers University, Oral Presenter) Ryuzo Tanaka (Rutgers University, Poster Presenter) | T19 |
| 110 | 8:51 - 9:03 | Determination of the Microkinetics of NO_x Storage and Reduction on Pt/BaO/Al₂O₃ catalysts using TAP (keynote, 12 min. presentation) Vemuri Balakotaiah (University of Houston, Oral Presenter) Vemuri Balakotaiah (University of Houston, Poster Presenter) | T20 |
| 40 | 9:03 - 9:09 | Microkinetic modeling: Hierarchical multiscale model development and use (6 min. presentation) Dion Vlachos (Univ. of Delaware, Oral Presenter) Dion Vlachos (Univ. of Delaware, Poster Presenter) | T21 |

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| 116 | 9:09 - 9:15 | Methanol Decomposition Reaction Mechanism and Kinetics: Microkinetic Modeling v/s Graph Theoretic Approach (6 min. presentation) Ravindra Datta (Worcester Polytechnic Institute, Oral Presenter) Saurabh Vilekar (Worcester Polytechnic Institute, Poster Presenter) | T22 |
| 43 | 9:15 - 9:21 | Mathematical Model Building with High Throughput Experimentation: A Case Study on Water Gas Shift Reaction Kinetics using a Bayesian Approach (6 min. presentation) Gary Blau (Purdue University, Oral Presenter) Gary Blau (Purdue University, Poster Presenter) | T23 |
| 27 | 9:21 - 9:27 | Hydrocarbon Fuel Effects in Solid Oxide Fuel Cells: An in-depth experimental and modeling study of C6 pyrolysis (6 min. presentation) Anthony M. Dean (Colorado School of Mines, Oral Presenter) Katie Randolph (Colorado School of Mines, Poster Presenter) | T24 |
| 82 | 9:27 - 9:33 | Selectivity Control in the Gas Phase Oxidation of Cyclohexane (6 min. presentation) Florian Patcas (University of South Carolina, Oral Presenter) Florian Patcas (University of South Carolina, Poster Presenter) | T25 |
| 146 | 9:33 - 9:39 | Feedstock Reconstruction by Entropy Maximization: Application to FCC Gasolines (6 min. presentation) Jan Verstraete (IFP, Oral Presenter) Jan Verstraete (IFP, Poster Presenter) | T26 |
| 124 | 9:39 - 9:45 | Multi-component Model Compound Probe Reaction for Solid Acid-Metal Catalysis (6 min. presentation) Lei Zhang (ExxonMobil Research & Engineering Co, Oral Presenter) Lei Zhang (ExxonMobil Research & Engineering Co, Poster Presenter) | T27 |
| 111 | 9:45 - 9:51 | Development of a Detailed Kinetic Model for the Hydrodesulfurization of FCC Naphtha (6 min. presentation) April Ross (ExxonMobil Process Research Laboratories, Oral Presenter) April Ross (ExxonMobil Process Research Laboratories, Poster Presenter) | T28 |
| 113 | 9:51 - 9:57 | Development of a Detailed Trickle Bed Reactor Model for Diesel Hydrotreating (6 min. presentation) Prasanna Joshi (ExxonMobil Research and Engineering, Oral Presenter) Prasanna Joshi (ExxonMobil Research and Engineering, Poster Presenter) | T29 |

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| 99 | <u>Investigation of the Impact of the Soluble Organic Fraction of Particulate Matter on Soot Oxidation Kinetics.</u> (poster only) Andrea Strzelec (ORNL/University of Wisconsin-Madison, Poster Presenter) | T30 |
| 30 | <u>Deduction of Reaction Mechanism using Data from a Robotic Workstation</u> (poster only) Samantha Burnham (Newcastle University, Poster Presenter) | T31 |



Title of Session: Step-out Technologies or Novel Processes

Session Chairs: Sankaran Sundaresan (Princeton University) and Liang-Shih Fan (Ohio State University)

Date: Wednesday, 2/7/2007 Venue: Salon B

| Abstract ID # | Time | Title of Paper, Presenters, and Affiliations | Poster Number |
|---------------|-------------|---|---------------|
| 121 | 8:15 - 8:27 | High Efficiency H2 Production from Coal using Chemical Looping Reforming Process – Process Evaluation and Economics (keynote, 12 min. presentation) Liang-Shih Fan (The Ohio State University, Oral Presenter) Luis G. Velazquez-Vargas (The Ohio State University, Poster Presenter) | W1 |
| 122 | 8:15 - 8:27 | Applications of Metal Oxide Redox Process in Fischer-Tropsch Synthesis for High Efficient Liquid Fuel Production (combined with keynote above) Liang-Shih Fan (The Ohio State University, Oral Presenter) Fanxing Li (The Ohio State University, Poster Presenter) | W2 |
| 135 | 8:15 - 8:27 | Calcium Looping Process for Enhanced Hydrogen Production Integrated with in-situ CO2 and Sulfur Capture in a Single Stage Reactor (combined with keynote above) Liang-Shih Fan (The Ohio State University, Oral Presenter) Shwetha Ramkumar (The Ohio State University, Poster Presenter) | W3 |
| 79 | 8:27 - 8:33 | Design strategy for high capacity Fischer-Tropsch synthesis in a microchannel (6 min. presentation) Kai Jarosch (Velocys Inc., Oral Presenter) Kai Jarosch (Velocys Inc., Poster Presenter) | W4 |
| 134 | 8:33 - 8:39 | Natural Gas Conversion to High Value-Added Oxygenates: Catalysis and Reaction Engineering Perspectives (6 min. presentation) Patrick Mills (Texas A&M University-Kingsville, Oral Presenter) Patrick Mills (Texas A&M University-Kingsville, Poster Presenter) | W5 |

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| 94 | 8:39 - 8:45 | An Intense Green Propylene Oxide Process that Operates Under Mild Conditions (6 min. presentation) Bala Subramaniam (University of Kansas, at the Center for Envir, Oral Presenter) Hyun-Jin Lee (University of Kansas, at the Center for Envir, Poster Presenter) | W6 |
| 139 | 8:45 - 8:51 | Intensified Homogeneous Hydroformylation of Higher Olefins in CO₂-expanded Liquids (6 min. presentation) Bala Subramaniam (University of Kansas, Oral Presenter) Jing Fang (University of Kansas, Poster Presenter) | W7 |
| 68 | 8:51 - 8:57 | Energy Efficient Route to Styrene Monomer (6 min. presentation) James Nehlsen (Exelus Inc., Oral Presenter) James Nehlsen (Exelus Inc., Poster Presenter) | W8 |
| 69 | 8:57 - 9:03 | Effective Revamping of Idle MTBE Units (6 min. presentation) James Nehlsen (Exelus Inc., Oral Presenter) James Nehlsen (Exelus Inc., Poster Presenter) | W9 |
| 97 | 9:03 - 9:09 | Development of Oxygen Carriers for Inherent CO₂ Capture (6 min. presentation) Arvind Varma (Purdue University, Oral Presenter) Peter Erri (Purdue University, Poster Presenter) | W10 |
| 95 | 9:18 - 9:24 | Nanostructured Oxygen Carriers for Chemical Looping Combustion (6 min. presentation) Goetz Vesper (University of Pittsburgh, Oral Presenter) Goetz Vesper (University of Pittsburgh, Poster Presenter) | W11 |
| 77 | 9:24 - 9:30 | Reactivity, stability and kinetic study of CoO-NiO/Al₂O₃ oxygen carrier using temperature programmed analysis (6 min. presentation) Hugo de Lasa (Dept. of Chemical & Biochemical Engineering, Oral Presenter) Mohammad Hossain (Dept. of Chemical & Biochemical Engineering, Poster Presenter) | W12 |
| 92 | 9:30 - 9:36 | Structuring Fluidized Beds (6 min. presentation) Marc-Olivier Coppens (Rensselaer Polytechnic Institute, Oral Presenter) Marc-Olivier Coppens (Rensselaer Polytechnic Institute, Poster Presenter) | W13 |
| 2 | 9:36 - 9:42 | Experimental Proof of the New Concept of a Rotating Fluidized Bed in a Static Geometry (6 min. presentation) Juray De Wilde (Université catholique de Louvain, Oral Presenter) Juray De Wilde (Université catholique de Louvain, Poster Presenter) | W14 |

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| 3 | 9:42 - 9:48 | <u>SYNTHESIS OF DIMETHYLACETAL USING AMBERLYST-15 RESIN AS ADSORBENT AND CATALYST IN SIMULATED MOVING BED REACTOR</u> (6 min. presentation) Madalena Dias (University of Porto, Oral Presenter) Madalena Dias (University of Porto, Poster Presenter) | W15 |
| 49 | 9:48 - 9:54 | <u>Silica as a catalyst for the oxidation of methane to formaldehyde</u> (6 min. presentation) Florina Corina Patcas (University of Karlsruhe, Oral Presenter) Florina Corina Patcas (University of Karlsruhe, Poster Presenter) | W16 |
| 109 | 9:54 - 10:00 | <u>Hydroxyapatite Nanoparticles: A Highly Reproducible Continuous Industrial Process</u> (6 min. presentation) Madalena Dias (University of Porto, Oral Presenter) Madalena Dias (University of Porto, Poster Presenter) | W17 |



Title of Session: Biological Reaction Engineering and Fuel Cells

Session Chairs: Richard Willson (University of Houston), Douglas Clark (University of California at Berkeley)

Date: Wednesday, 2/7/2007 Venue: Salon A

| Abstract ID # | Time | Title of Paper, Presenters, and Affiliations | Poster Number |
|---------------|-------------|--|---------------|
| 25 | 8:15 - 8:27 | Microbial production of butanol (keynote, 12 min. presentation) George Bennett (Rice University, Oral Presenter) George Bennett (Rice University, Poster Presenter) | W20 |
| 32 | 8:27 - 8:39 | DYNAMIC BEHAVIOR OF CELL POPULATIONS GROWING UNDER MASS TRANSPORT LIMITATIONS (keynote, 12 min. presentation) Kyriacos Zygourakis (Rice University, Oral Presenter) Kyriacos Zygourakis (Rice University, Poster Presenter) | W21 |
| 14 | 8:39 - 8:45 | Bifurcation and Singularity Analysis of a Signal Transduction and Gene Regulatory Network underlying the Induction of Long-Term Memory (6 min. presentation) Hao Song (University of Texas Medical School at Houston, Oral Presenter) Hao Song (University of Texas Medical School at Houston, Poster Presenter) | W22 |
| 106 | 8:45 - 8:51 | Prediction of Mass Transfer Coefficients, Mixing and Cell Stress in non-Newtonian Fermentation Broths using First-principles Methods (6 min. presentation) Johannes Khinast (Graz University of Technology, Oral Presenter) Johannes Khinast (Graz University of Technology, Poster Presenter) | W24 |
| 91 | 8:51 - 8:57 | Nature Inspired Chemical Engineering (6 min. presentation) Marc-Olivier Coppens (Rensselaer Polytechnic Institute, Oral Presenter) Marc-Olivier Coppens (Rensselaer Polytechnic Institute, Poster Presenter) | W29 |

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| 151 | 8:57 - 9:03 | Microbial Nitrilases for Cyanide Remediation (6 min. presentation) Michael Benedik (Dept. of Biology, Texas A&M University, Oral Presenter) Michael Benedik (Dept. of Biology, Texas A&M University, Poster Presenter) | W25 |
| 123 | 9:03 - 9:09 | INTRINSIC KINETICS OF CELLULOSE HYDROLYSIS: EXPERIMENTAL AND SIMULATION STUDIES (6 min. presentation) M. Nazmul Karim (TEXas Tech University, Oral Presenter) M. Nazmul Karim (TEXas Tech University, Poster Presenter) | W26 |
| 148 | 9:18 - 9:24 | Sustainable Energy and Transportation (6 min. presentation) Mark Holtzapple (Texas A&M University, Oral Presenter) Mark Holtzapple (Texas A&M University, Poster Presenter) | W27 |
| 81 | 9:24 - 9:30 | High-Throughput Biocatalysis: Creating New Opportunities for Synthesis and Discovery (6 min. presentation) Douglas Clark (Univeristy of California, Oral Presenter) Douglas Clark (Univeristy of California, Poster Presenter) | W28 |
| 29 | 9:30 - 9:36 | CHARACTERIZING REFORMING KINETICS OF HYDROCARBONS WITHIN A NI-YSZ ANODE USING EXPERIMENTAL AND MODELING TECHNIQUES (6 min. presentation) Anthony M. Dean (Colorado School of Mines, Oral Presenter) Gaurav K. Gupta (Colorado School of Mines, Poster Presenter) | W30 |
| 39 | 9:36 - 9:42 | Study of Composition and Size Dynamics of Platinum-alloy Electrocatalysts for PEMFC USing Small Angle X-ray Scattering (6 min. presentation) Peter Strasser (University of Houston, Oral Presenter) Shirlaine Koh (University of Houston, Poster Presenter) | W31 |
| 98 | 9:42 - 9:48 | Novel Chemical Mixtures to Generate Hydrogen for Fuel Cells (6 min. presentation) Arvind Varma (Purdue University, Oral Presenter) Moiz Diwan (Purdue University, Poster Presenter) | W32 |
| 147 | 9:48 - 9:54 | Electrochemical Enhancement of Catalytic Reactions (6 min. presentation) Ravindra Datta (Worcester Polytechnic Institute, Oral Presenter) Saurabh Vilekar (Worcester Polytechnic Institute, Poster Presenter) | W33 |