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Preliminary Program

2008 Spring National Meeting & 4th Global Congress on Process Safety



April 6-10, 2008

Ernest N. Morial Convention Center
New Orleans, LA

For the latest information visit:
www.aiche.org/spring

This year's meeting will feature special joint programming with the 235th National Meeting of the American Chemical Society, 10 Topical Conferences and Core Programming covering the industry's hottest topics, including Distillation, Energy Processes, Natural Gas/Liquified Natural Gas, and more.

Highlights of the Meeting will include:

- 4th Global Congress on Process Safety
 - 23rd CCPS International Conference
 - 42nd Loss Prevention Symposium
 - 10th Process Plant Safety Symposium
- 20th Annual Ethylene Producers' Conference
- IMRET-10 — 10th International Conference on Microreaction Technology

Plus:


- Keynote addresses by Richard Igercich, ExxonMobil Chalmette Refinery, and Takashi Kubota, Chiyoda Corporation of Japan
- A **Special Joint Presidential Showcase** featuring Dr. Raymond Orbach, Under Secretary for Science, DOE; Dr. Patricia M. Dehmer, Deputy Director for Science Programs, DOE Office of Science, and other invited DOE officials
- Nearly 90 joint sessions developed by AIChE and ACS
- Expanded exhibit hall and Career Fair


AIChE[®]
Spring National Meeting, New Orleans **100**

(1) Sunday, Apr 6, 8:00 AM**[COMP] COMPUTATIONAL PHASE EQUILIBRIA I**
New Orleans Convention Center, Room 337*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Computational Molecular Science
and Engineering Forum***(2) Sunday, Apr 6, 8:00 AM****[POLY] ENTREPRENEURSHIP IN POLYMERS FOR THE
ENERGY AND THE ENVIRONMENT I**
Hilton New Orleans Riverside, Section 18*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Materials Engineering and
Sciences Division***(3) Sunday, Apr 6, 8:00 AM****[POLY] FUNCTIONAL NANOMATERIALS FROM NEW
POLYMER SYNTHETIC METHODOLOGIES - RADICAL
POLYMERIZATION: METHODS AND MATERIALS I**
Hilton New Orleans Riverside, Section 3*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Materials Engineering and
Sciences Division***(4) Sunday, Apr 6, 8:10 AM****[PHYS] NANOSTRUCTURED MATERIALS -
NANOCRYSTALS I**
New Orleans Convention Center, Rooms 338-339*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Nanoscale Science and
Engineering Forum***(5) Sunday, Apr 6, 8:30 AM****[IEC] ALTERNATIVE RESOURCES FOR THE CHEMICAL
INDUSTRY I**
New Orleans Convention Center, Room 223*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Research and New Technology
Committee***(6) Sunday, Apr 6, 8:30 AM****[ENVR] ADVANCES IN ADSORPTION PROCESSES FOR
DRINKING WATER TREATMENT AND SOURCEWATER
PROTECTION I**
New Orleans Convention Center, Room 236*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division***(7) Sunday, Apr 6, 8:30 AM****[ENVR] NEW MEMBRANES AND RESINS FOR
WASTEWATER TREATMENT I**
New Orleans Convention Center, Room 237*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division***(8) Sunday, Apr 6, 8:50 AM****[CINF] ENGINEERING THE TRANSITION TO THE
BIOECONOMY - INFORMATION RESOURCES**
Marriott Convention Center, Blaine Kern D*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Sustainable Engineering Forum***(9) Sunday, Apr 6, 8:55 AM****[FUEL] COAL AND GAS TO LIQUIDS - COAL AND
BIOMASS CONVERSION**
New Orleans Convention Center, Room 239*Sponsored by: ACS Led Co-Sponsored Sessions**Co-Sponsored by: Gas, Topical 6: 8th Topical
Conference on Natural Gas Utilization***(10) Sunday, Apr 6, 9:00 AM****[WCC] STARS: SCIENCE & TECHNOLOGY AWARDS AND
RECOGNITIONS - FOR PROFESSIONALS IN THE CHEMICAL
SCIENCES I**
Marriott Convention Center, New Levee*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Woman's Initiative Committee***(11) Sunday, Apr 6, 1:20 PM****[PHYS] NANOSTRUCTURED MATERIALS -
NANOCRYSTALS II**
New Orleans Convention Center, Rooms 338-339*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Nanoscale Science and
Engineering Forum***(12) Sunday, Apr 6, 1:30 PM****[WCC] STARS: SCIENCE & TECHNOLOGY AWARDS AND
RECOGNITIONS - FOR PROFESSIONALS IN THE CHEMICAL
SCIENCES II**
Marriott Convention Center, New Levee*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Woman's Initiative Committee***(13) Sunday, Apr 6, 1:30 PM****[COMP] COMPUTATIONAL CATALYSIS - ZEOLITES AND
HOMOGENEOUS**
New Orleans Convention Center, Room 337*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Computational Molecular Science
and Engineering Forum***(14) Sunday, Apr 6, 1:30 PM****[FUEL] COAL AND GAS TO LIQUIDS - KINETICS, DESIGN
AND NUMERICAL MODELING OF FT CATALYSTS**
New Orleans Convention Center, Room 239*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Gas, Topical 6: 8th Topical
Conference on Natural Gas Utilization***(15) Sunday, Apr 6, 1:30 PM****[ENVR] ADVANCES IN ADSORPTION PROCESSES FOR
DRINKING WATER TREATMENT AND SOURCEWATER
PROTECTION II**
New Orleans Convention Center, Room 236*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division***(16) Sunday, Apr 6, 1:30 PM****[POLY] ENTREPRENEURSHIP IN POLYMERS FOR THE
ENERGY AND THE ENVIRONMENT II**
Hilton New Orleans Riverside, Section 18*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Materials Engineering and
Sciences Division***(17) Sunday, Apr 6, 1:30 PM****[ENVR] NEW MEMBRANES AND RESINS FOR
WASTEWATER TREATMENT II**
New Orleans Convention Center, Room 237*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division***(18) Sunday, Apr 6, 2:00 PM****[POLY] FUNCTIONAL NANOMATERIALS FROM NEW
POLYMER SYNTHETIC METHODOLOGIES - RADICAL
POLYMERIZATION: METHODS AND MATERIALS II**
Hilton New Orleans Riverside, Section 3*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Materials Engineering and
Sciences Division***(19) Monday, Apr 7, 8:00 AM****2008 GLOBAL CONGRESS OPENING AND KEYNOTE
ADDRESS**
New Orleans Convention Center, Hall E-2*Sponsored by: Topical 4: Center for Chemical Process
Safety (CCPS) 23rd International Conference
Co-Sponsored by: Topical 1: 42nd Loss Prevention
Symposium, Topical 3: 10th Process Plant Safety
Symposium***(20) Monday, Apr 7, 8:00 AM****ADVANCES IN HYDROPROCESSING I**
New Orleans Convention Center, Room 387*Sponsored by: Topical 7: 11th Topical on Refinery
Processing***Mapping Hydroprocessing Reactor Operating
Regimes**
8:00 AM, Paper 20a**Hydroconversion of Fischer-Tropsch Waxes Over
Platinum Loaded Catalyst: Assessment of Product
Distribution**
8:30 AM, Paper 20b**Exxonmobil MIDWTM Process - Technology and
Commercial Experiences for Production of Low-
Cloud Point ULSD**
9:00 AM, Paper 20c**Ecofining Process Overview**
9:30 AM, Paper 20d**Feed-Flexible Processing of Oil-Rich Crops to Jet Fuel**
10:00 AM, Paper 20e**(21) Monday, Apr 7, 8:00 AM****ADVANCES IN SEPARATIONS PROCESSES**
New Orleans Convention Center, Room 385*Sponsored by: Topical 7: 11th Topical on Refinery
Processing***Novel Reverse-Selective Membrane for Refinery
Applications**
8:00 AM, Paper 21a**Benzene Reduction from Gasoline by Pervaporation
Using Cation-Exchanged Membrane Containing
Metal Ions**
8:30 AM, Paper 21b**The Synthesis of Separation Networks with Complex
Column**
9:00 AM, Paper 21c**Diesel Desulfurization to ULSD - Overcoming
Nitrogen Inhibition**
9:30 AM, Paper 21d**Deep Desulfurization of Fuels Using Ionic Liquid
Based on FeCl₃**
10:00 AM, Paper 21e

◆ For Division Codes indicated in ACS led Co-Sponsored sessions, please refer to "Key to ACS Division Codes" on Page T40



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(22) Monday, Apr 7, 8:00 AM**CARBON SEQUESTRATION I**

New Orleans Convention Center, Room 397

*Sponsored by: Research and New Technology Committee**Co-Sponsored by: Fuels and Petrochemicals Division*Progress and New Developments in CO₂ Capture and Storage

8:00 AM, Paper 22a

Polyimides and Their Derivatives for Gas Separation Applications

8:25 AM, Paper 22b

Carbon Dioxide Selective Supported Ionic Liquid Membranes: The Effect of Contaminants

8:50 AM, Paper 22c

Theoretical Predictions of Hydrogen Permeability in Pd-Based Membranes

9:15 AM, Paper 22d

Post-Combustion Dry Phase CO₂ Capture with a Charged Polymeric Membrane

9:40 AM, Paper 22e

Capture of CO₂ from Combustion Flue Gas Using the Carbozyme Liquid Membrane Permeator – Results of Pilot-Scale Testing

10:05 AM, Paper 22f

Development of Poly(amidoamine) (PAMAM) Dendrimer Composite Membrane Module for CO₂ Separation

10:30 AM, Paper 22g

(23) Monday, Apr 7, 8:00 AM**CHEMICAL PROCESSING OF NANOPARTICULATE MATERIALS I**

New Orleans Convention Center, Room 297

Sponsored by: Nanoscale Science and Engineering Forum

Semiconducting Polythiophene Nanotubes by Template Wetting Nanofabrication

8:00 AM, Paper 23a

Growth Characteristics and Properties of Si and Si_{1-x}Gex Nanowires

8:20 AM, Paper 23b

Electrochemical Construction of Nanocrystalline Electrodes with Dendritic, Fibrous, and Wire Morphologies

8:40 AM, Paper 23c

Self-Assembly and Patterning of Transferrable Ultra-Thin Films of Monolayer Nanoparticles

9:00 AM, Paper 23d

Mechanical Force-Induced Nucleation and Growth of Peptide Nanofibers at Liquid/Solid Interfaces

9:20 AM, Paper 23e

Self-Assembly of Virus-Templated High Surface Area Ni and Co Nano-Structures

9:50 AM, Paper 23f

Controlled Nanostructure and Catalyst Approaches of Metal Oxide Semiconductors for Gas Sensing

10:10 AM, Paper 23g

New Synthetic Route to Produce TiO₂-PMMA Nanocomposites for Orthopedic Applications

10:30 AM, Paper 23h

Photocatalytic Decomposition of Trichloroethylene in Air by Nanostructured TiO₂ Films

10:50 AM, Paper 23i

(24) Monday, Apr 7, 8:00 AM**[COMP] COMPUTATIONAL PHASE EQUILIBRIA II**

New Orleans Convention Center, Room 337

*Sponsored by: ACS Led Co-Sponsored Sessions**Co-Sponsored by: Computational Molecular Science and Engineering Forum***(25) Monday, Apr 7, 8:00 AM****CURRENT CHALLENGES IN PROCESS DEVELOPMENT AND DEPLOYMENT**

New Orleans Convention Center, Room 390

*Sponsored by: Pilot Plants**Co-Sponsored by: Technology Transfer*

Rude Awakenings in Pilot Plant Operation

8:05 AM, Paper 25a

Consequences of Pilot Plant Design Decisions

8:30 AM, Paper 25b

Scale-Down Considerations for Pilot Plants and Bench-Scale Units

8:55 AM, Paper 25c

Planning an Ethylene-Based Complex in the Middle East

9:20 AM, Paper 25d

Trends in Investment in Ethylene-Based Technology in the Middle East

9:45 AM, Paper 25e

Studying Water Quality by Corrosion & Scaling Index with Changing the Method of Microorganisms Control

10:10 AM, Paper 25f

(26) Monday, Apr 7, 8:00 AM**FEDERAL ROLE IN RENEWABLE LIQUID FUELS: STRATEGY AND PERSPECTIVE**

New Orleans Convention Center, Room 288

Sponsored by: Topical B: Energy Processes

Current and Upcoming Federal Policies Related to Biofuels and What Will Be the Impact

8:00 AM, Paper 26a

Next Generation Hydrocarbon Biorefineries

8:30 AM, Paper 26b

Challenges to a Successful Biofuels Industry and Department of Energy Efforts to Overcome Them

9:00 AM, Paper 26c

Biomass to Biofuels, Strategies and Advances in Basic Science to Overcome Major Research Barriers

9:30 AM, Paper 26d

(27) Monday, Apr 7, 8:00 AM**GREEN CHEMISTRY & ENGINEERING - NANOTECHNOLOGY**

New Orleans Convention Center, Room 350

*Sponsored by: AIChE Led Co-Sponsored Sessions**Co-Sponsored by: Environmental Division*

Nanotechnology and Its Applications to Antimicrobials: Scientific and Regulatory Issues and Concerns

8:05 AM, Paper 27a

Synthesis and Characterization of Fe Doped TiO₂ Nanomaterials in scCO₂ I

8:30 AM, Paper 27b

Proton - SO₃⁻ Interactions in Nafion Polymer Electrolyte Membrane Fuel Cells Gleaned from *Ab Initio* Molecular Dynamics Simulations of Mono-, Di-, and Tetra-Hydrate Trifluoromethanesulfonic Acids

8:55 AM, Paper 27c

A One-Pot Route toward Light Selective Quantum Dot Polymer Nanofilms in scCO₂

9:20 AM, Paper 27d

Fabricating Colloidal Crystals with Different Structures and Nanostructures Derived from Them

10:00 AM, Paper 27e

Novel Biopolymer/Rectorite Nanocomposite with Antimicrobial Activity

10:25 AM, Paper 27f

(28) Monday, Apr 7, 8:00 AM**HEAVY OIL CHEMISTRY I**

New Orleans Convention Center, Room 386

*Sponsored by: AIChE Led Co-Sponsored Sessions**Co-Sponsored by: Fuels and Petrochemicals Division*

Depicting and Separating "Pro-Linking" Compounds to Enhance Upgrading Performance and Heavy Oils Processin

8:00 AM, Paper 28a

Heavy Oil Tutorial: Polynuclear Aromatics, the Barrier to Conversion

8:30 AM, Paper 28b

Ionization Reagents for Enhanced Speciation of Petroleum Compound Classes by Electrospray Ionization FT-ICR Mass Spectrometry (ESI FT-ICR MS)

9:00 AM, Paper 28c

Understanding Asphaltenes Conversion in Fixed Bed Conditions

9:30 AM, Paper 28d

Updating Heavy Oil and Upgrading Vacuum Simulation and Design Considerations

10:00 AM, Paper 28e

(29) Monday, Apr 7, 8:00 AM**INDUSTRIAL APPLICATIONS OF MICROWAVE AND RADIO FREQUENCY PROCESSING I**

New Orleans Convention Center, Room 290

Sponsored by: AIChE Led Co-Sponsored Sessions

Technology and Emerging Applications Using Low Temperature Plasmas

8:00 AM, Paper 29a

Elseware © (Electromagnetic Laboratory Simulation Environment Software): Development of a New Software Package to Simulate Electromagnetic Processes

8:40 AM, Paper 29b

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Microwave Drying of Heat Sensitive and Difficult to Dry Materials
9:20 AM, Paper 29c

Radio Frequency Applications in Industrial Processes
10:00 AM, Paper 29d

Conventional and Emerging MW/RF Processing Methods for Polymers, Plastics and Composites
10:40 AM, Paper 29e

Microwave Assist Technology for Chemical Processing
11:20AM, Paper 29f

(30) Monday, Apr 7, 8:00 AM
LIQUEFIED NATURAL GAS (LNG) - TECHNOLOGY
New Orleans Convention Center, Room 389

Sponsored by: Natural Gas Utilization
Co-Sponsored by: Fuels and Petrochemicals Division, Topical 6: 8th Topical Conference on Natural Gas Utilization

Concept Validation for a Very Large LNG Train
8:00 AM, Paper 30a

Comparison Study on Small-Scale LNG Plants in China
8:20 AM, Paper 30b

Cost Effective and Practical NGL Stripping Processes
8:40 AM, Paper 30c

An Innovative Control Scheme of a C3/MR LNG Plant
9:00 AM, Paper 30d

Meeting Growing Energy Demand with Liquefied Natural Gas (LNG) in a Carbon-Constrained World
9:20 AM, Paper 30e

Comparison of Present Day Peakshaving Liquefaction Technologies
9:40 AM, Paper 30f

Floating LNG Liquefaction Facilities Using the Optimized Cascade Process
10:00 AM, Paper 30g

(31) Monday, Apr 7, 8:00 AM
MANAGING ETHYLENE PLANT ABNORMAL OPERATIONS PAPER SESSION
New Orleans Convention Center, Rooms 395-396

Sponsored by: Topical 2: The 20th Ethylene Producers' Conference

Introductory Remarks
8:00 AM

University of Ethylene and Freshman Orientation
8:10 AM, Paper 31a

BFLP Gasoline Fractionator – Operating History, Packing Damage, and Treatment Program
8:35 AM, Paper 31b

BFLP Gasoline Fractionator – Stone & Webster Ripple Tray® Installation
9:00 AM, Paper 31c

Critical Condition Management
9:45 AM, Paper 31d

Operating Experience and Enhanced Acetylene Reactor Performance
10:10 AM, Paper 31e

Corrosion Under Insulation
10:35 AM, Paper 31f

Steam System Process Upset Review & Validation of Response
11:00 AM, Paper 31g

(32) Monday, Apr 7, 8:00 AM
MASSIVE ELECTRICITY STORAGE: FIXING RENEWABLE POWER'S ACHILLES' HEEL
New Orleans Convention Center, Room 289

Sponsored by: Research and New Technology Committee

Session Introduction
8:00 AM, Paper 32a

Power System Instability
8:10 AM, Paper 32b

R&D for Massive Storage Technologies for Solar Power
8:30 AM, Paper 32c

Vanadium Flow Batteries for Wind Generators
8:50 AM, Paper 32d

Sodium-Sulfur Batteries for Peak Shaving or Wind Generation
9:10 AM, Paper 32e

Massive Electricity Storage Panel Discussion
9:30 AM, Paper 32f

Question and Answer Session with Audience
10:00 AM, Paper 32g

(33) Monday, Apr 7, 8:00 AM
REACTION ENGINEERING AND CATALYSIS OF FUELS
New Orleans Convention Center, Room 349

Sponsored by: Catalysis and Reaction Engineering Division

Kinetic Modeling of N-Dodecane Dehydrogenation on Pt/Al₂O₃ Catalyst Based on LHHW Mechanism
8:00 AM, Paper 33a

Deep Oxidative Desulfurization of Fuels Catalyzed by Peroxophosphomolybdate Compounds in Ionic Liquids
8:25 AM, Paper 33b

Direct Dimethylether Synthesis Using Reverse Shift Assisted Reforming
8:50 AM, Paper 33c

Ultra-Deep Desulfurization of Fuels Catalyzed by Molybdc Compound in Ionic Liquids
9:15 AM, Paper 33d

Hydrogen Conversion by Reforming of Jet Fuel in a Supercritical Water Medium – Effects of the Water-to-Fuel Feed Ratio on the Conversion
9:40 AM, Paper 33e

Understanding Sulfur Poisoning in Steam Reforming of n-Hexadecane: Catalyst Characterization Studies
10:05 AM, Paper 33f

(34) Monday, Apr 7, 8:00 AM
ROTATING EQUIPMENT PAPER SESSION
New Orleans Convention Center, Rooms 393-394

Sponsored by: Topical 2: The 20th Ethylene Producers' Conference

Compressor Surge
8:30 AM, Paper 34a

Use of Dynamic Simulation in the Design of Ethylene Plants
8:35 AM, Paper 34b

Steam Turbine Internal Blade or Diaphragm Corrosion and Fatigue Failure
9:00 AM, Paper 34c

Noise Control in Ethylene Plants
9:50 AM, Paper 34d

Consider Piping Dynamics with Compressor Revamps
10:15 AM, Paper 34e

Olefins Plant Compressors Reliability Performance Survey
10:40 AM, Paper 34f

(35) Monday, Apr 7, 8:00 AM
SEPARATIONS: MEMBRANES
New Orleans Convention Center, Room 384

Sponsored by: Membrane-Based Separations

Eddy Diffusivity Spiegler-Kedem (EDSK) Model for Reverse Osmosis Membrane
8:00 AM, Paper 35a

Preparation of Zr(IV)-Loaded Membranes for Adsorptive Removal of As(V) from Aqueous Solutions
8:30 AM, Paper 35b

Stability and Selectivity of Supported Liquid Membranes with Ionic Liquid for Separation of Organic Liquids by Vapor Permeation
9:00 AM, Paper 35c

Membrane Contactor/Ionic Liquid for Biofuel Recovery
9:30 AM, Paper 35d

CO₂ Removal from CO₂/H₂ Mixtures Using Immobilized Liquid Membranes Containing Amine Blends as Carrier
10:00 AM, Paper 35e

Low-Temperature Plasma Modification of Polyvinylidene Fluoride (PVDF) Membrane by Graft of Styrene in Gas
10:30 AM, Paper 35f

(36) Monday, Apr 7, 8:00 AM
THERMODYNAMICS IN CHEMICAL ENGINEERING: PROSPECTS AND PERSPECTIVES - FUNDAMENTALS OF SIMULATION AND THEORY
New Orleans Convention Center, Room 351

Sponsored by: AIChE Led Co-Sponsored Sessions
Co-Sponsored by: Thermodynamics and Transport Properties

Simulation Methods for the Thermodynamics and Kinetics of Complex Systems
8:00 AM, Paper 36a

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RESPONSIBILITIES:

- Prepares overall process designs and specifications of onsite, offsite, and utility systems
- Develops System Design Parameters
- Develops process simulation models and process optimization for various parts or units of the total plant
- Calculates Heat & Material Balances
- Designs Process Flow Diagrams (PFD's)
- Designs Piping & Instrumentation Diagrams (P&ID's)
- Specifies equipment and instrumentation
- Participates in design and safety reviews
- Interfaces with client and project engineering teams

REQUIREMENTS:

- Bachelor Degree (or equivalent) and/or an advanced degree in Chemical Engineering required.
- Minimum of 3 years experience in engineering design or operating plant, front-end engineering experience preferred
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Molecular Simulation of Advanced Materials
8:35 AM, Paper 36b

Advances in Molecular Modeling of Bulk and Interfacial Phase Behavior and Microstructure in Copolymers and Associating Fluids
9:10 AM, Paper 36c

New Picture of First-Order Phase Transitions in Metastable Fluids: Homogeneous Nucleation and Growth
9:45 AM, Paper 36d

Mainstreaming Molecular Simulation in Chemical Engineering Education and Application
10:20 AM, Paper 36e

(37) Monday, Apr 7, 8:20 AM
[PHYS] NANOSTRUCTURED MATERIALS - NANOCRYSTALS III
New Orleans Convention Center, Rooms 338-339

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Nanoscale Science and Engineering Forum

(38) Monday, Apr 7, 8:20 AM
[PHYS] MULTISCALE MODELING IN BIOPHYSICS - PROTEIN FLEXIBILITY AND DYNAMICS AT MULTIPLE RESOLUTIONS I
New Orleans Convention Center, Room 346

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Thermodynamics and Transport Properties

(39) Monday, Apr 7, 8:25 AM
[FUEL] COAL AND GAS TO LIQUIDS - NOVEL FT CATALYST DEVELOPMENT AND CHARACTERIZATION
New Orleans Convention Center, Room 239

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Topical 6: 8th Topical Conference on Natural Gas Utilization

(40) Monday, Apr 7, 8:25 AM
[CINF] ENGINEERING THE TRANSITION TO THE BIOECONOMY - POLICY AND ECONOMICS
Marriott Convention Center, Blaine Kern D

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Sustainable Engineering Forum

(41) Monday, Apr 7, 8:30 AM
[ENVR] ADVANCES IN ADSORPTION PROCESSES FOR DRINKING WATER TREATMENT AND SOURCEWATER PROTECTION III
New Orleans Convention Center, Room 236

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division

(42) Monday, Apr 7, 8:30 AM
[POLY] FUNCTIONAL NANOMATERIALS FROM NEW POLYMER SYNTHETIC METHODOLOGIES - PARTICULATE AND HETEROGENEOUS SYSTEMS
Hilton New Orleans Riverside, Section 7/10

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Materials Engineering and Sciences Division

(43) Monday, Apr 7, 8:30 AM
[ENVR] MEMBRANE TECHNOLOGY FOR WATER TREATMENT AND REUSE - HYBRID PROCESSES AND PROCESS DEVELOPMENT

New Orleans Convention Center, Room 237

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division

(44) Monday, Apr 7, 9:00 AM
[CHAL] PATENTING AND TECHNOLOGY TRANSFER IN UNIVERSITY-INDUSTRY COLLABORATION: CHAL'S 25TH ANNIVERSARY SERIES I
New Orleans Convention Center, Room 243

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Management Division

(45) Monday, Apr 7, 9:00 AM
CATALYZED AND ENZYMATICAL PROCESSES - PART 1: HETEROGENEOUS CATALYTIC PROCESSES
New Orleans Convention Center, Room 392

Sponsored by: Topical 5: IMRET-10: 10th International Conference on Microreaction Technology

Model-Based Design of Hierarchically Structured Porous Catalysts
9:00 AM, Paper 45a

Fabrication and Reaction Properties of Mesoporous Silica Thin Films Inside Microreactors
9:25 AM, Paper 45b

Zeolitic Coatings Onto Fecralloy Microchannels: Washcoating vs. In Situ Growing
9:50 AM, Paper 45c

"Sandwich Microreactor" for Heterogeneous Catalytic Processes: N₂O Decomposition as a Case Study
10:15 AM, Paper 45d

Catalyzed Hydrogenation by Coated Catalysts in Microstructured Reactors
10:40 AM, Paper 45e

Development and Optimization of a Microstructured Reactor for the Partial Oxidization of Propane to Propene
11:05 AM, Paper 45f

Styrene Production Via a Highly Selective Partial Oxidation Route Enabled by Novel Catalyst Substrates in Microchannel Reactors
11:30 AM, Paper 45g

(46) Monday, Apr 7, 8:45 AM
FINE CHEMICALS AND PHARMACEUTICALS SYNTHESIS AND PRODUCTION - PART 1
New Orleans Convention Center, Room 391

Sponsored by: Topical 5: IMRET-10: 10th International Conference on Microreaction Technology

IMRET-10 Conference Opening Remarks
8:45 AM

Microreactor Technology in the Fine Chemical and Pharmaceutical Industry: Is the Revolution Underway?
9:00 AM, Paper 46a

Investigation into the Preparation of Synthetically Useful ? – Aminonitriles Under Continuous Flow
9:25 AM, Paper 46b

Process Development for Fluorination of a Steroid with DAST and Deoxofluor
9:50 AM, Paper 46c

A Multistep Process for the Synthesis of Pharmaceutical Intermediates by an Ozonolysis–Reduction–Sequence Using Microchemical Engineering with an Integrated Miniaturized Fiber–Optical Diamond ATR Sensor in a Multipurpose Plant
10:15 AM, Paper 46d

Poly-L-Leucine Catalysed Chalcone Epoxidation in a Microstructured PEEK Reactor
10:40 AM, Paper 46e

Multiple Purpose Micro Reaction Plants for Development and Production
11:05 AM, Paper 46f

Production of Hydrogen Peroxide Via the Direct Combination of H₂ and O₂ in a Pilot Microreactor
11:30 AM, Paper 46g

(47) Monday, Apr 7, 10:15 AM
APPLICATIONS OF SAFETY CULTURE
New Orleans Convention Center, Room 352

Sponsored by: Topical 3: 10th Process Plant Safety Symposium

Lessons from Safety Culture Evaluations at Process Facilities
10:15 AM, Paper 47a

Spot the Hazard! A Cultural Extension of Hazard Identification Training
10:45 AM, Paper 47b

Establishing a Personal Philosophy for Promoting Safety, Health and Environmental Excellence
11:15 AM, Paper 47c

(48) Monday, Apr 7, 10:15 AM
FIRE, EXPLOSION AND REACTIVE HAZARDS, PART I
New Orleans Convention Center, Rooms 356-357

Sponsored by: Topical 1: 42nd Loss Prevention Symposium
Co-Sponsored by: Loss Prevention & Process Safety

Estimating Flame Speeds for Use with the BST Blast Curves
10:15 AM, Paper 48a

On the Possibility of DDT in Vapor Cloud Explosions
10:45 AM, Paper 48b

Hydrocarbon Haze and ASU Safety
11:15 AM, Paper 48c

(49) Monday, Apr 7, 10:15 AM
RISK LEARNINGS
New Orleans Convention Center, Rooms 353-355

Sponsored by: Topical 4: Center for Chemical Process Safety (CCPS) 23rd International Conference

Three Years on from Texas City
10:15 AM, Paper 49a

Lessons Learned While Developing and Implementing Company Process Safety Metrics
10:45 AM, Paper 49b

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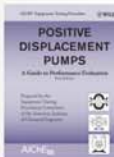
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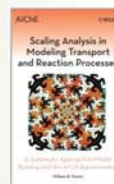
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Structural Capital a Unique Management Tool for Achieving Higher Level in Quality and Safety
11:15 AM, Paper 49c

(50) Monday, Apr 7, 11:15 AM
FUELS & PETROCHEMICALS DIVISION KEYNOTE PRESENTATION

New Orleans Convention Center, Hall E-2

Sponsored by: Fuels and Petrochemicals Division

Fuels & Petrochemicals Division Keynote Presentation
11:15 AM, Paper 50a

(51) Monday, Apr 7, 1:00 PM
[FUEL] HYBRID NANOTECHNOLOGIES FOR AN ENHANCED CO₂ FIXATION - CO₂ SEPARATION TECHNOLOGIES
New Orleans Convention Center, Room 239

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Fuels and Petrochemicals Division*

(52) Monday, Apr 7, 1:20 PM
[PHYS] NANOSTRUCTURED MATERIALS - INTERFACE
New Orleans Convention Center, Rooms 338-339

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Nanoscale Science and Engineering Forum*

(53) Monday, Apr 7, 1:20 PM
[PHYS] MULTISCALE MODELING IN BIOPHYSICS - PROTEIN FLEXIBILITY AND DYNAMICS AT MULTIPLE RESOLUTIONS II
New Orleans Convention Center, Rooms 340-341

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Thermodynamics and Transport Properties*

(54) Monday, Apr 7, 1:30 PM
ETHYLENE PRODUCERS' CONFERENCE KEYNOTE PRESENTATION
New Orleans Convention Center, Rooms 393-394

Sponsored by: Topical 2: The 20th Ethylene Producers' Conference

Ethylene 2028 - Feedstock Scenarios
1:35 PM, Paper 54a

Ethylene Producers' Conference 20th Anniversay
2:05 PM, Paper 54b

(55) Monday, Apr 7, 1:30 PM
HUMAN FACTORS
New Orleans Convention Center, Rooms 353-355

Sponsored by: Topical 4: Center for Chemical Process Safety (CCPS) 23rd International Conference

Human Factors Programs within Contra Costa County
1:30 PM, Paper 55a

Behavior of Employees
2:00 PM, Paper 55b

Process Industry Tool for Operator Action Analysis
2:30 PM, Paper 55c

(56) Monday, Apr 7, 1:30 PM
[BMGT] ACS AWARD IN INDUSTRIAL CHEMISTRY: SYMPOSIUM IN HONOR OF T.J. WALLINGTON:

GREENHOUSE GASES SEQUESTRATION: TECHNOLOGY AND ECONOMICS I

Marriott Convention Center, Julia

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division*

(57) Monday, Apr 7, 1:30 PM
[CHAL] PATENTING AND TECHNOLOGY TRANSFER IN UNIVERSITY-INDUSTRY COLLABORATION: CHAL'S 25TH ANNIVERSARY SERIES II

New Orleans Convention Center, Room 243

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Management Division*

(58) Monday, Apr 7, 1:30 PM
[COMP] COMPUTATIONAL CATALYSIS - NANO
New Orleans Convention Center, Room 337

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Computational Molecular Science and Engineering Forum*

(59) Monday, Apr 7, 1:30 PM
AIChE/ACS PRESIDENTIAL EVENT - ENERGY RESEARCH: FUTURE CHALLENGES AND OPPORTUNITIES
New Orleans Convention Center, La Louisiane, Ballroom C

Sponsored by: Liaison Functions

Introduction and Overview of the Basic Energy Science (BES) Program
1:40 PM, Paper 59a
Assuring a Secure Energy Future
2:10 PM, Paper 59b

Solar Energy Utilization
2:40 PM, Paper 59c

Advanced Nuclear Energy Systems
3:00 PM, Paper 59d

Hydrogen Economy
3:20 PM, Paper 59e

Electrical Energy Storage
3:40 PM, Paper 59f

Catalysis for Transportation Fuels
4:00 PM, Paper 59g

(60) Monday, Apr 7, 1:30 PM
FIRE, EXPLOSION AND REACTIVE HAZARDS, PART II
New Orleans Convention Center, Rooms 356-357

*Sponsored by: Topical 1: 42nd Loss Prevention Symposium
Co-Sponsored by: Loss Prevention & Process Safety*

Evaluating Kinetic Parameters for Solid Substances Exhibiting Complex Self-Heating Behavior
1:30 PM, Paper 60a

Modeling Spills of Reactive Chemicals
2:00 PM, Paper 60b

Isothermal Decomposition of Hydroxylamine and Hydroxylamine Nitrate in Aqueous Solutions in the Temperature Range 353-400 K
2:30 PM, Paper 60c

A New Testing Facility to Characterize ESD Hazards
3:30 PM, Paper 60d

Toward a Global Standard for Flammability Determination
4:00 PM, Paper 60e

A Method for Determining the Flammable Limits of Gases in a Spherical Vessel
4:30 PM, Paper 60f

(61) Monday, Apr 7, 1:30 PM
PLANT PROCESS SAFETY MANAGEMENT SYSTEMS
New Orleans Convention Center, Room 352

Sponsored by: Topical 3: 10th Process Plant Safety Symposium

Retool Your PSM Program for Efficiency and to Meet Multiple Management System Requirements
1:30 PM, Paper 61a

Improved Process Safety Management and Simple Metrics
2:00 PM, Paper 61b

Strengthening Process Safety Requirements in HSE Management System - An NOC's Experience
2:30 PM, Paper 61c

Implementation of DHS Chemical Facility
3:30 PM, Paper 61d

Deploy Six Sigma Methodology to Improve Process Safety
4:00 PM, Paper 61e

Quality Assurance and Process Safety Management
4:30 PM, Paper 61f

(62) Monday, Apr 7, 1:30 PM
[ENVR] MEMBRANE TECHNOLOGY FOR WATER TREATMENT AND REUSE - BIOLOGICAL AND INORGANIC FOULING OF MEMBRANES
New Orleans Convention Center, Room 237

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division*

(63) Monday, Apr 7, 1:30 PM
[FUEL] CLEAN ENERGY, FUELS AND CHEMICALS FROM BIOMASS - BIOFUELS
New Orleans Convention Center, Room 238

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Fuels and Petrochemicals Division*

(64) Monday, Apr 7, 2:00 PM
FINE CHEMICALS AND PHARMACEUTICALS SYNTHESIS AND PRODUCTION - PART 2
New Orleans Convention Center, Room 388

Sponsored by: Topical 5: IMRET-10: 10th International Conference on Microreaction Technology

Development and Evaluation of Microreaction Experiments and Implementation into University Teaching
2:00 PM, Paper 64a

Ionic Liquids in Continuous Flow Microreactors
2:25 PM, Paper 64b

Microreactors for the Basic Organic Teaching Lab Course
2:50 PM, Paper 64c

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Synthesis of Photochromic Diarylethenes Using a Microflow System
3:15 PM, Paper 64d

Generation and Reactions of Ortho Bromophenyllithium without Benzyne Formation Using Microflow System
3:40 PM, Paper 64e

Development and Experimental Characterization of a Pilot-Scale Falling Film Microreactor and Outlook on Production Scale
4:05 PM, Paper 64f

Synthetic Study of Biofunctional Molecules by Using Microfluidic System
4:30 PM, Paper 64g

(65) Monday, Apr 7, 2:00 PM
MIXING, MASS TRANSFER AND HEAT EXCHANGE -PART 1
New Orleans Convention Center, Room 389

Sponsored by: Topical 5: IMRET-10: 10th International Conference on Microreaction Technology

Microchannel Based Integrated Desorber-Rectifier-Recuperator
2:00 PM, Paper 65a

Gas-Liquid Taylor Flow Characteristics in Straight and Meandering Rectangular Microchannels
2:25 PM, Paper 65b

Microreactor for Synthesis Via Intermediates with Assembled Units Enabling Rapid Mixing and Heat Transfer and Short Residence Time
2:50 PM, Paper 65c

Fouling and Long Term Stability in Micro Heat Exchangers
3:15 PM, Paper 65d

Continuous Synthesis of Environmentally Friendly Lubricants in Scalable Reactors
3:40 PM, Paper 65e

Development of a Cross Flow Micro Heat Exchanger: Design and Analysis
4:05 PM, Paper 65f

Experimental Investigation of the Laminar/Turbulent Transition of Liquid Flows in Rectangular Micro Channels Using μ PIV
4:30 PM, Paper 65g

(66) Monday, Apr 7, 2:00 PM
ADVANCES IN CATALYSIS AND BIOCATALYSIS IN REFINING
New Orleans Convention Center, Room 350

Sponsored by: AIChE Led Co-Sponsored Sessions Co-Sponsored by: Fuels and Petrochemicals Division, Topical 7: 11th Topical on Refinery Processing

1-Butene Alkylation Reactions on PtSO_xZr/TiZrO_y Catalyst
2:00 PM, Paper 66a

Isomerization of Hexane on Pt-Au Nanoparticles Supported on Zeolite
2:30 PM, Paper 66b

Surface Chemistry of Carbon on Ni and Ni-Alloys: Promotion of the Long-Term Stability of Reforming Ni Catalysts by Surface Alloying
3:00 PM, Paper 66c

Biocatalytic Systems for Aromatic Oxidations
3:30 PM, Paper 66d

Simulation Process of Biodiesel Production Over Heterogeneous Catalysts
4:00 PM, Paper 66e

Whole-Cell Biocatalysis in Biphasic Media for Oxidation of Naphthalene
4:30 PM, Paper 66f

(67) Monday, Apr 7, 2:00 PM
ADVANCES IN HYDROPROCESSING II
New Orleans Convention Center, Room 387

Sponsored by: Topical 7: 11th Topical on Refinery Processing

High Quality Base Oil Production Via the Hylube Process
2:00 PM, Paper 67a

Unravelling the Detailed Characterization of Hydroprocessing Feeds and Products
2:25 PM, Paper 67b

Unlocking High Value Products from Light Cycle Oil
2:50 PM, Paper 67c

Chemical Tracers Find Elusive Leak in Hydrotreater Feed/Effluent Exchangers
3:15 PM, Paper 67d

(68) Monday, Apr 7, 2:00 PM
CARBON SEQUESTRATION II
New Orleans Convention Center, Room 397

Sponsored by: Research and New Technology Committee Co-Sponsored by: Fuels and Petrochemicals Division

The Role of Power Generation Technology in Mitigating Global Climate Change
2:00 PM, Paper 68a

Vacuum Swing Adsorption Cycles for Carbon Dioxide Capture from Flue and Stack Gases
2:25 PM, Paper 68b

Metal Organic Frameworks for Carbon Dioxide Capture
2:50 PM, Paper 68c

Economic CO₂ Capture with Solid Sorbents
3:15 PM, Paper 68d

A Generic Analysis of Energy Use and Solvent Selection for CO₂ Separation from Post-Combustion Flue Gases
3:40 PM, Paper 68e

Evaluation of Ionic Liquids as Novel Post-Combustion Carbon Dioxide Capture Solvents
4:05 PM, Paper 68f

Performance Evaluation of Aqueous Ammonia Process for CO₂ Capture
4:30 PM, Paper 68g

(69) Monday, Apr 7, 2:00 PM
CATALYSIS AND REACTION ENGINEERING OF FINE CHEMICALS
New Orleans Convention Center, Room 349

Sponsored by: Catalysis and Reaction Engineering Division

Formation of Glycerol Derivatives by Catalytic Condensation and Acetalization
2:00 PM, Paper 69a

"Pot-in-Pot" Reactions: Polymer Macro-Fabrication for Site-Isolation of Catalysts and Reagents for Cascade Reactions
2:20 PM, Paper 69b

Hydroformylation of Higher Olefins with Immobilized Catalysts
2:40 PM, Paper 69c

Exceptionally Active Single-Site Mesoporous Pd/Al₂O₃ Catalysts for Allylic Alcohol Selective Aerobic Oxidation
3:00 PM, Paper 69d

Utilisation of Heterogeneous Catalysts for the Selective Synthesis of Di-and Triglycerol
3:20 PM, Paper 69e

Aerobic Epoxidation of Alkenes with Manganese (III) Salen Complexes Immobilised onto Aminopropyl-HMS
3:40 PM, Paper 69f

Enzymatic Synthesis of Small Chiral Alcohols in One-Phase and Two-Phase Systems
4:00 PM, Paper 69g

(70) Monday, Apr 7, 2:00 PM
CHEMICAL PROCESSING OF NANOPARTICULATE MATERIALS II
New Orleans Convention Center, Room 297

Sponsored by: Nanoscale Science and Engineering Forum

Photopolymerization of Reactive Lyotropic Liquid Crystals
2:00 PM, Paper 70a

Monodisperse Ag-Au Alloy Nanoparticles with Independently Tunable Composition, Size, Internal Structure and Surface Chemistry, and Their 3-D Superlattices
2:20 PM, Paper 70b

Manipulating Silver Nano-Structure Using Supercritical Carbon Dioxide
2:40 PM, Paper 70c

Size Fractionation of Nanoparticles by Magnetophoresis Using Structured Wire Arrays
3:00 PM, Paper 70d

Feedback-Regulated Paclitaxel Delivery Based on Poly(N,N-dimethylaminoethyl methacrylate-co-2-hydroxyethyl methacrylate) Nanoparticles
3:20 PM, Paper 70e

Multivariate Population Balance Models for Nanoparticle Stabilization by Copolymer Assembly
4:00 PM, Paper 70f

Morphology and Properties of Neat SWNT Fibers from Chlorosulfonic Dope
4:20 PM, Paper 70g

Fabrication and Application of Highly Dispersible Single Wall Carbon Nanotubes-Polymer Composite
4:40 PM, Paper 70h

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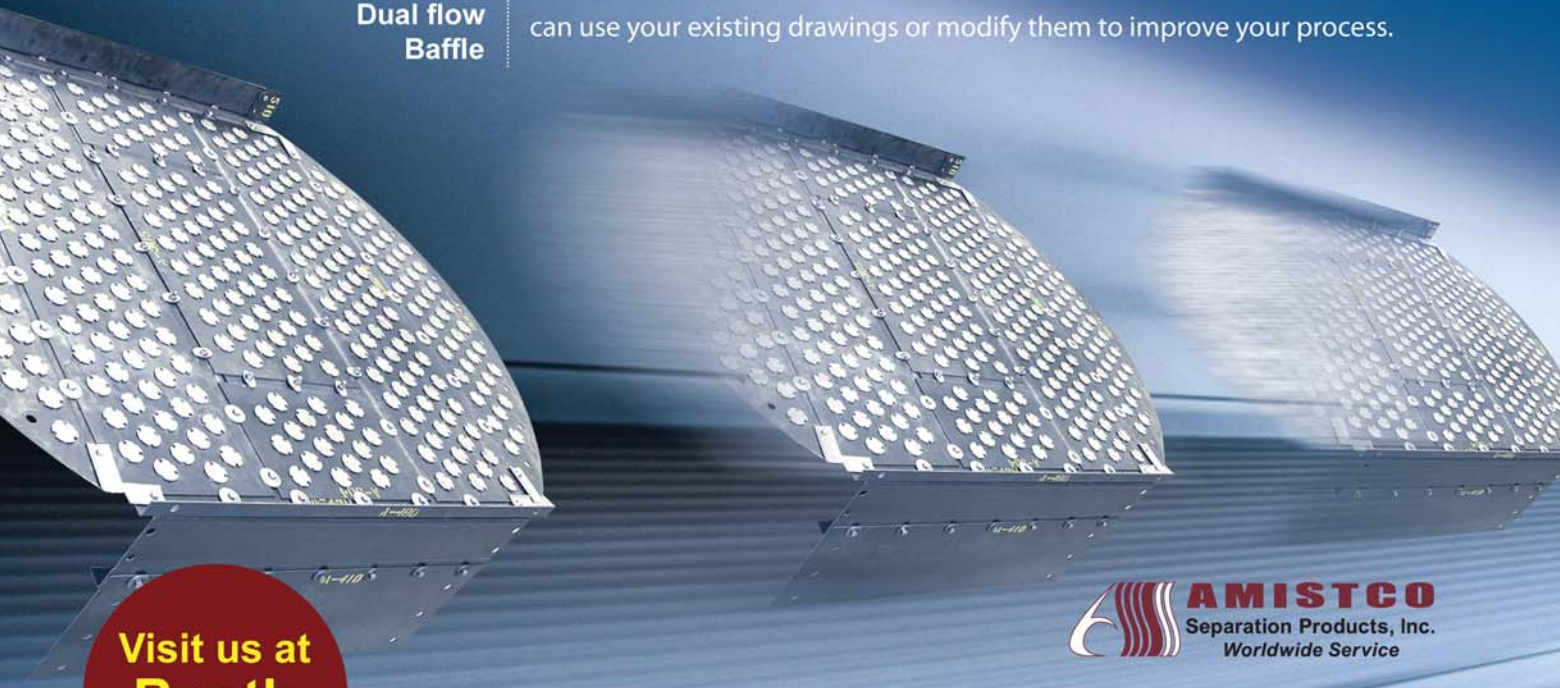
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Mechanically Robust Antibacterial Thin Films Composed of Single-Walled Carbon Nanotubes and Biopolymers
5:00 PM, Paper 70i

(71) Monday, Apr 7, 2:00 PM

HYDROTHERMAL PROCESSING FOR WASTEWATER TREATMENT

New Orleans Convention Center, Room 289

Sponsored by: Environmental Division

Treatment and Color Removal of Wastewaters Using Wet Air Oxidation

2:00 PM, Paper 71a

The Disposal of Neutralized Chemical Warfare Materials Using a Commercial Wet Oxidation System: A Case Study

2:25 PM, Paper 71b

Wet Oxidation as Applied to Powdered Activated Carbon Recovery in Wastewater Treatment

2:50 PM, Paper 71c

Comparison of Treatment Efficiencies of Various Advanced Oxidation Processes for Dye Removal from Wastewater

3:15 PM, Paper 71d

A Novel Static Mixer to Ensure a Minimum Processing Time for Thermophilic Sludge Digestion

3:40 PM, Paper 71e

(72) Monday, Apr 7, 2:00 PM

LIQUEFIED NATURAL GAS (LNG) - REGASIFICATION

New Orleans Convention Center, Room 385

Sponsored by: Natural Gas Utilization

Co-Sponsored by: Fuels and Petrochemicals Division, Topical 6: 8th Topical Conference on Natural Gas Utilization

An Old Technology and a New Application in Processing Rich LNG to Meet Pipeline Gas Specification at LNG Receiving Terminals

2:00 PM, Paper 72a

Optimized Vaporization Process with Unfavorable Design Conditions

2:20 PM, Paper 72b

Considerations for Ambient Air-Based Technologies for LNG Regasification Terminals

2:40 PM, Paper 72c

LNG Pump Applications with Variable Speed Motor Controls at LNG Regasification Terminals

3:00 PM, Paper 72d

SIMAR Applications in Gas Processing: Supercritical Feed Stream

3:20 PM, Paper 72e

Utilization of Atmospheric Heat Exchangers in LNG Vaporization Processes: A Comparison of Systems and Methods

3:40 PM, Paper 72f

(73) Monday, Apr 7, 2:00 PM

PLANT TROUBLESHOOTING AND PROBLEM SOLVING: THE CHEMIST AND ENGINEER WORKING TOGETHER

New Orleans Convention Center, Room 390

Sponsored by: Manufacturing

Introductory Remarks

2:00 PM

Plant Troubleshooting: Engineers as Detectives

2:05 PM, Paper 73a

Tar Wars in a Complex Chemical Plant: A Fundamentals Approach to Problem Solving

2:30 PM, Paper 73b

Herding Cats: Forming and Leading a Plant Troubleshooting Team

2:55 PM, Paper 73c

Collaboration Leads to Successful Introduction of New Products

3:20 PM, Paper 73d

Tolling Success: Your Chemists and Our Engineers Working Together

3:45 PM, Paper 73e

Lean Six Sigma Approach in Chemical Process Troubleshooting

4:10 PM, Paper 73f

(74) Monday, Apr 7, 2:00 PM

PROJECT MANAGEMENT

New Orleans Convention Center, Room 290

Sponsored by: Management Division

Synergy in Mergers of Petrochemical Companies within a Complex Considering Purchasing and Selling Advantage with Process Integration

2:00 PM, Paper 74a

Permitting for Fun & Profit

2:30 PM, Paper 74b

Project Portfolio Capital at Risk and the Enterprise Project Delivery System

3:00 PM, Paper 74c

Managing Uncertainties in Project Management of Hydrocarbon Projects

3:30 PM, Paper 74d

Analyzing Mobile Service Provider's Strategy in Providing Mobile Digital Content and Services in Next Generation Networks

4:00 PM, Paper 74e

(75) Monday, Apr 7, 2:00 PM

SEPARATIONS: EFFECTIVELY DESIGNING HEAT EXCHANGERS

New Orleans Convention Center, Room 384

Sponsored by: Separations Division

Condenser Design Workshop

2:00 PM, Paper 75a

(76) Monday, Apr 7, 2:00 PM

THERMODYNAMICS IN CHEMICAL ENGINEERING: PROSPECTS AND PERSPECTIVES - NANOSCALE AND BIOLOGICAL SYSTEMS

New Orleans Convention Center, Room 351

Sponsored by: AIChE Led Co-Sponsored Sessions Co-Sponsored by: Thermodynamics and Transport Properties

Runniness and Randomness of Confined Fluids

2:00 PM, Paper 76a

Investigating the Phase Behavior of Fluids in the Vicinity of a Surface

2:35 PM, Paper 76b

Hydrophobic and Hydrophilic Hydration and Interactions Relevant to Biological Systems

3:10 PM, Paper 76c

Disentangling the Stability and Function of Natively Unfolded Proteins

3:45 PM, Paper 76d

Adsorption of Microorganisms on Single-Walled Carbon Nanotubes and Other Porous Media

4:20 PM, Paper 76e

(77) Monday, Apr 7, 2:00 PM

TUTORIAL ON MIXING APPLIED TO CHEMICAL REACTORS

New Orleans Convention Center, Room 386

Sponsored by: North American Mixing Forum

Mechanical Design of Mixing Equipment Applied to Chemical Reaction

2:00 PM, Paper 77a

Design and Scale-Up of Mixed Chemical Reactors

2:25 PM, Paper 77b

Practical Considerations in the Applications of Mixing in Chemical Reaction Systems

2:50 PM, Paper 77c

(78) Monday, Apr 7, 2:00 PM

[POLY] FUNCTIONAL NANOMATERIALS FROM NEW POLYMER SYNTHETIC METHODOLOGIES - NOVEL SYNTHETIC METHODS AND MATERIALS

Hilton New Orleans Riverside, Section 7/10

Sponsored by: ACS Led Co-Sponsored Sessions Co-Sponsored by: Materials Engineering and Sciences Division

(79) Monday, Apr 7, 3:00 PM

MANAGING ETHYLENE PLANT ABNORMAL OPERATIONS ROUNDTABLE DISCUSSION

New Orleans Convention Center, Rooms 395-396

Sponsored by: Topical 2: The 20th Ethylene Producers' Conference

20 Year Reflection of EPC Operations

3:00 PM, Paper 79a

Abnormal Events - Operations Roundtable

3:20 PM, Paper 79b

Operations Roundtable Small Group Discussion

4:10 PM, Paper 79c

Operations Roundtable Events Discussion & Summary

4:40 PM, Paper 79d

(80) Monday, Apr 7, 3:00 PM

ROTATING EQUIPMENT TUTORIAL SESSION, "COMPRESSOR AND STEAM TURBINE BASICS"

New Orleans Convention Center, Rooms 393-394

Sponsored by: Topical 2: The 20th Ethylene Producers' Conference

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(81) Monday, Apr 7, 3:00 PM
[FUEL] HYBRID NANOTECHNOLOGIES FOR AN ENHANCED CO₂ FIXATION - CO₂ CONVERSION INTO PRODUCTS OF THE CHEMICAL AND ENERGY INDUSTRY: HOMOGENEOUS CATALYSIS

New Orleans Convention Center, Room 239

*Sponsored by: ACS Led Co-Sponsored Sessions
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(82) Monday, Apr 7, 3:30 PM

LEARNING & CULTURE

New Orleans Convention Center, Rooms 353-355

Sponsored by: Topical 4: Center for Chemical Process Safety (CCPS) 23rd International Conference

Learning from the Past

3:30 PM, Paper 82a

Implementing Process Safety - Kuwait Petroleum Corp
 4:00 PM, Paper 82b

Minimizing the Use and Hazard of Solvents During Process Design

4:30 PM, Paper 82c

(83) Monday, Apr 7, 5:30 PM

MICRO PROCESS ENGINEERING POSTER SESSION

New Orleans Convention Center, Rooms 391-392

Sponsored by: Topical 5: IMRET-10: 10th International Conference on Microreaction Technology

Computational Fluid Dynamics Study of Heat Transfer in a Microchannel Reactor for Fischer-Tropsch Synthesis
 Paper 83a

Mass Transfer during Taylor Flow in Microchannels with and without Chemical Reaction
 Paper 83b

Precipitation of Barium Sulphate in a Hollow Fibers Membrane Device – Numerical Simulation and Experimental Validation
 Paper 83c

Simulation of Plasma Processing in a Microplasma
 Paper 83d

Numerical Study of Droplet Formation Patterns in Flow Focusing Microfluidics
 Paper 83e

Micro Reactor Application for the Beckmann Rearrangement to Epsilon-Caprolactam
 Paper 83f

Development of An Active Rotary Reactor and Application to Emulsion Production
 Paper 83g

Segmented Gas-Liquid-Liquid Flow and Use for Catalytic Reactions
 Paper 83h

Investigation of Condition for Bubble Detachment from Microchannels
 Paper 83i

Controlled Hydrogen Peroxide Decomposition for a Solid Oxide Fuel Cell (SOFC) Oxidant Source with Microreactors
 Paper 83j

An Experimental Study on Nitration of Naphthalene Using Dynamically Rotating Axis Microreactor
 Paper 83k

Visualisation of Flow in Microchannel Array Water Evaporators by High-Speed Videography
 Paper 83l

Effect of Surfactants on the Formation of Au/Ag Core/Shell Nanoparticles in Micro Segmented Flow Synthesis
 Paper 83m

Selective Hydrogenation of Phenylacetylene to Styrene on a Pd/TiO₂ Coating in a Microreactor
 Paper 83n

Micro Particle Image Velocimetry (μ -PIV) in Porous Media Using Refractive Index Matching
 Paper 83o

Visualisation of Packed Bed Behaviour Using 3D Confocal Microscopy and Microfluidics
 Paper 83p

Micro Structured Reactors for Heterogenously Catalyzed Gas Phase Reactions – A Concept Study
 Paper 83q

Synthesis of Carbon Nanofibers on Silicon Substrates Using Sol-Gel Prepared Porous Alumina Layer
 Paper 83r

μ 2 - Microwave Assisted Microreactor Processing: Synthesis of Ionic Liquids
 Paper 83s

Nitration of Toluene in a Microreactor Using Mixed Acid
 Paper 83t

High Temperature Reactions in Microstructured Reactors – Synthesis of Biphenyl by Pyrolysis of Benzene
 Paper 83u

Reforming of J.P.-8 in Microplasmas for Compact SOFC Power: Year 1
 Paper 83v

Optimizing the Deprotection of the Amine Protecting p-Methoxyphenyl (PMP) Group in an Automated Microreactor Platform
 Paper 83w

A Continuous Flow Microwave-Assisted Microreactor System
 Paper 83x

Sequential Integration of Br-Li Exchange Reactions Using Microflow Systems
 Paper 83y

Controllable Synthesis of Peptide Polymers in Microfluidic Reactor
 Paper 83z

On-Chip Parallelization of Microreactors: Up-Scaling Synthesis Microreactor Technology
 Paper 83aa

Fluid Flow in Deep Microchannel Reactor (FMR) for Pilot Scale Production
 Paper 83ab

Scale-Out Concepts in Chemical Micro Process Engineering Exemplified on Production Oriented Case Studies
 Paper 83ac

An Effective Tool to Measure Reaction Heat with Micro-Pore Dispersion Reactor
 Paper 83ad

A Thick Film Printed Electrochemical Biosensor and Its Application for Testing the Ketone 3- β -Hydroxybutyrate for Potential Diabetic Patient Management
 Paper 83ae

Investigation of Different Mixers in a Micro Reactor
 Paper 83af

Modular Microreaction System
 Paper 83ag

Universal Micro-Reactors Made of Glass for Applications to Study the Reaction Kinetics
 Paper 83ah

Anionic Polymerization in Microreactor
 Paper 83ai

Microplasma Reactors with Integrated Carbon Nanofibers and Tungsten Oxide Nanowires Electrodes
 Paper 83aj

(84) Tuesday, Apr 8, 8:00 AM

KEY PERFORMANCE INDICATORS, PART 1

New Orleans Convention Center, Rooms 353-355

Sponsored by: Topical 4: Center for Chemical Process Safety (CCPS) 23rd International Conference

Process Safety Management Indicators for Risk and Process Accidents Reduction
 8:00 AM, Paper 84a

Consequence Based Metric for the Assessment of Inherent Safety
 8:30 AM, Paper 84b

The Evolution and Current State of Psm Metrics within DuPont
 9:00 AM, Paper 84c

(85) Tuesday, Apr 8, 8:00 AM

LABORATORY AND PILOT PLANT SAFETY

New Orleans Convention Center, Rooms 356-357

Sponsored by: Topical 1: 42nd Loss Prevention Symposium

Co-Sponsored by: Loss Prevention & Process Safety

The AIChE Chem-E-Car Safety Program
 8:00 AM, Paper 85a

Enhancing the Undergraduate Chemical Engineering Lab with an Industrial Process Safety Approach
 8:30 AM, Paper 85b

Safety Scale-Up Processes and Accommodate Recipe Changes
 9:00 AM, Paper 85c

◆ For Division Codes indicated in ACS led Co-Sponsored sessions, please refer to "Key to ACS Division Codes" on Page T40

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(86) Tuesday, Apr 8, 8:00 AM**ADVANCES IN ENVIRONMENTAL EMISSION ABATEMENT TECHNOLOGIES**

New Orleans Convention Center, Rooms 395-396

*Sponsored by: Topical 2: The 20th Ethylene Producers' Conference*Welcoming and Introductory Remarks
8:00 AMEquistar Chemicals Olefins Environmental Agreement
8:20 AM, Paper 86aGreenhouse Gas Emissions Trading
8:45 AM, Paper 86bSmart LDAR: Pipe Dream or Potential Reality
9:10 AM, Paper 86cApplication and Performance of Solar Technology
Next Generation Combustion System
9:55 AM, Paper 86dEvaluation of Treatment of an Ethylene Plant Waste
Water with a Membrane Bioreactor
10:20 AM, Paper 86eCracking Heater Convection Retrofit with Integral SCR
10:45 AM, Paper 86fDust Emissions During Cracking Furnace Decoking –
Regulations Versus the Measured Performance
11:10 AM, Paper 86g**(87) Tuesday, Apr 8, 8:00 AM****ETHYLENE PLANT SAFETY PAPER SESSION**

New Orleans Convention Center, Rooms 393-394

*Sponsored by: Topical 2: The 20th Ethylene Producers' Conference*Management of Hazards Associated with Location of
Process Plant Portable Buildings
8:15 AM, Paper 87aGuidelines for Controlling Catastrophic Releases by
Means of Remotely Actuated Valves
8:40 AM, Paper 87bEmergency Isolation System at BASF/FINA
Petrochemicals Port Arthur Olefins Plant
9:05 AM, Paper 87cUnexpected Fire at Dupont While Preparing to Feed
Check Furnace
9:55 AM, Paper 87dAutomated Switch-Over Between Transfer-Line Valve
& Decoke Valves
10:20 AM, Paper 87eHazardous Flue Gas Mixtures in Furnaces
10:45 AM, Paper 87f**(88) Tuesday, Apr 8, 8:00 AM****MAINTAINING INSTRUMENT AND MECHANICAL INTEGRITY**

New Orleans Convention Center, Room 352

*Sponsored by: Topical 3: 10th Process Plant Safety Symposium*Safe Management of Unforeseen Delays in
Mechanical Integrity Inspection Schedules
8:00 AM, Paper 88aRecent Developments and Technology Improvements
in API Risk-Based Inspection Planning Technology
8:30 AM, Paper 88bThe Family Tree of Protective Requirements
Specifications
9:00 AM, Paper 88cRisk Analysis for Operation of Aluminum Heat
Exchangers Contaminated by Mercury
10:15 AM, Paper 88dAnalysis of Pressure Relief Valve Proof Test Data:
Findings and Implications
10:45 AM, Paper 88eFire Protection for Extremely Corrosive Industrial
Duct Environments
11:15 AM, Paper 88f**(89) Tuesday, Apr 8, 8:00 AM****[COMP] COMPUTATIONAL PHASE EQUILIBRIA III**

New Orleans Convention Center, Room 337

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Computational Molecular Science
and Engineering Forum***(90) Tuesday, Apr 8, 8:00 AM****[POLY] FUNCTIONAL NANOMATERIALS FROM NEW
POLYMER SYNTHETIC METHODOLOGIES - CATALYZED
POLYMERIZATIONS**

Hilton New Orleans Riverside, Section 7/10

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Materials Engineering and
Sciences Division***(91) Tuesday, Apr 8, 8:00 AM****CARBON SEQUESTRATION III**

New Orleans Convention Center, Room 397

*Sponsored by: Research and New Technology
Committee*Evaluation of Potential Impacts of Geologic Carbon
Sequestration Using Numerical Simulation
8:00 AM, Paper 91aFlame Stability and Emissions with Oxy-Coal
Combustion
8:25 AM, Paper 91bOxygen Sorbents for Oxy-Fuel Combustion and IGCC
Power Plants
8:50 AM, Paper 91cChemical Looping Combustion of Coal Derived
Synthesis Gas Over Copper-Based Oxygen Carrier
9:15 AM, Paper 91dAnalyses of Hot/Warm CO₂ Capture for IGCC
Processes
9:40 AM, Paper 91eNovel Integration of Gas Separation Membranes for
CO₂ Capture from IGCC Power Plants
10:05 AM, Paper 91fTechnical and Economic Assessment of an Advanced
Solid Oxide Fuel Cell-Based Power System
10:30 AM, Paper 91gDecarbonisation in Energy Production
10:55 AM, Paper 91h**(92) Tuesday, Apr 8, 8:30 AM****CONTROL AND OPTIMIZATION IN REFINING I**

New Orleans Convention Center, Room 387

*Sponsored by: Topical 7: 11th Topical on Refinery
Processing*Framework for Operability Assessment of Production
Facilities: An Application to a Primary Unit of a Crude
Oil Refinery
8:30 AM, Paper 92aFidelity, Dynamics, Integrity – The Real Needs for
Automation System Testing and Training
9:00 AM, Paper 92bA Modified Extended Recursive Least-Squares
Method for Identification of FIR Type Models from
Closed-Loop Data
9:30 AM, Paper 92cExperimental Test Design for MIMO Identification
Subject to Integral Controllability
10:00 AM, Paper 92dThe LP as Utility Systems Design & Optimization Tool
10:30 AM, Paper 92e**(93) Tuesday, Apr 8, 8:30 AM****DISTILLATION HONORS**

New Orleans Convention Center, Room 384

*Sponsored by: Topical 8: Distillation Topical*What I Learned from Dr. Seibert
8:30 AM, Paper 93aA New Model for Predicting Gas / Liquid Effective
Surface Area in Packing
9:05 AM, Paper 93bSmart Distillation Prevents Problems Before They
Occur
9:40 AM, Paper 93cSuccessful Industrial / Academia Collaboration
10:15 AM, Paper 93dStandardization of Structured Packing Efficiency
Measurements
10:50 AM, Paper 93e**(94) Tuesday, Apr 8, 8:30 AM****ENVIRONMENTAL REGULATORY HOT TOPICS**

New Orleans Convention Center, Room 297

*Sponsored by: Legislation and Regulation*New Source Review and Recent Judicial
Developments
8:30 AM, Paper 94aClean Water Act Section 404: Jurisdictional
Determinations and Nationwide Permits
9:10 AM, Paper 94bAssessment of Vapor Intrusion into Structures on
Property Involved in Real Estate Transactions: The
New ASTM Standard Practice
9:50 AM, Paper 94cKatrina: Regulatory Lessons Learned
10:30 AM, Paper 94d

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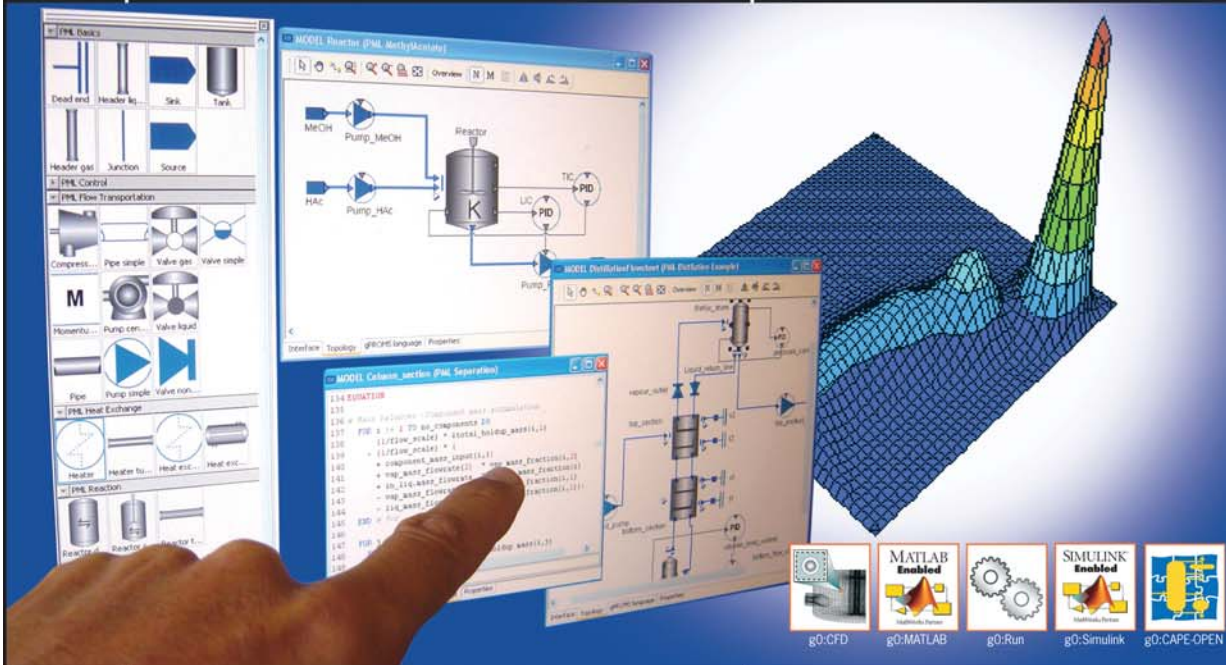


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**(95) Tuesday, Apr 8, 8:00 AM
PETROCHEMICALS AND DERIVATIVES I**

New Orleans Convention Center, Room 385

*Sponsored by: Petrochemicals & Derivatives*Welcoming Remarks
8:00 AMApplying Computational Fluid Dynamics (CFD)
Modeling to Improve the Para-Xylene (PX)
Crystallization Process
8:05 AM, Paper 95aStudy on the Kinetics of Ca-Based CO₂ Sorbent of
Carbonation and Calcination for Adsorption
Enhanced Reforming Process
8:30 AM, Paper 95bThe Property Variations of Produced Polyacrylamide
from Polymer Flooding Reservoirs and Their Effects
on Concentration Detection
8:55 AM, Paper 95cUltraviolet Analysis of the Toluene Fraction in
Bitumen from Agbadu (Western Nigeria)
9:20 AM, Paper 95dPropylene or BTX - Enhanced Production with New
Technology Integration
9:45 AM, Paper 95eCoal-Derived Syngas Via the KBR Transport
Gasifier™
10:10 AM, Paper 95fThe Effect of Oxygen Availability on the Oxidation of
Cyclohexane
10:35 AM, Paper 95gOptimization and Control of an Industrial Packed-
Bed Reactor for the Production of Ethylene Oxide
11:00 AM, Paper 95hThermal Cracking Studies by Design of a Pilot Plant
11:25 AM, Paper 95i**(96) Tuesday, Apr 8, 8:30 AM
RECENT DEVELOPMENTS IN SOLAR ENERGY
TECHNOLOGIES**

New Orleans Convention Center, Room 288

*Sponsored by: Topical B: Energy Processes*Power Transfer and Inductance in a Star Connected
3-Phase RC Circuit Amplifier
8:30 AM, Paper 96aExtraction of Energy from the Earth's Rotation
9:00 AM, Paper 96bHigh Temperature Co-Electrolysis of Steam and
Carbon Dioxide to Produce Synthesis Gas Utilizing
Concentrator Photovoltaic Arrays
9:30 AM, Paper 96c**(97) Tuesday, Apr 8, 8:30 AM
THERMOCHEMICAL CONVERSION OF FOREST & OTHER
BIOMASS TO HYDROGEN, BIOFUELS AND CHEMICALS**

New Orleans Convention Center, Room 289

*Sponsored by: Topical B: Energy Processes*Hydromax - Breakthrough Technology for Conversion
of Biomass to Fuels and Chemicals
8:30 AM, Paper 97aH₂ Purification and CO₂ Capture in a Post-Biomass-
Gasifier Membrane Reactor
8:55 AM, Paper 97bFast Pyrolysis of Poplar Wood and Poultry Litter
9:20 AM, Paper 97cSyngas/ Hydrogen Production Via Gasification of
Meat and Bone Meal
9:45 AM, Paper 97dIntermediate Temperature Catalytic Reforming of
Bio-Oil for Distributed Hydrogen Production
10:10 AM, Paper 97eBiomass Gasification Using a Fixed-Bed Downdraft
Gasifier
10:35 AM, Paper 97f**(98) Tuesday, Apr 8, 8:20 AM
[PHYS] NANOSTRUCTURED MATERIALS - ENERGY I**

New Orleans Convention Center, Rooms 338-339

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Nanoscale Science and
Engineering Forum***(99) Tuesday, Apr 8, 8:20 AM
[PHYS] MULTISCALE MODELING IN BIOPHYSICS -
PROTEIN FLEXIBILITY AND DYNAMICS AT MULTIPLE
RESOLUTIONS III**

New Orleans Convention Center, Rooms 340-341

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Thermodynamics and Transport
Properties***(100) Tuesday, Apr 8, 8:25 AM
[CINF] ENGINEERING THE TRANSITION TO THE
BIOECONOMY - SCIENCE AND TECHNOLOGY**

Marriott Convention Center, Blaine Kern D

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Sustainable Engineering Forum***(101) Tuesday, Apr 8, 8:30 AM
CATALYZED AND ENZYMATIC PROCESSES - PART 2:
ENZYMATIC (BIO) CATALYTIC PROCESSES**

New Orleans Convention Center, Room 391

*Sponsored by: Topical 5: IMRET-10: 10th International
Conference on Microreaction Technology*A Plug-and-Play Microreactor Platform for Small
Volume Reaction Optimization
8:30 AM, Paper 101aCombining Chemical and Enzymatic Catalysis for the
Enantioselective Oxidation of Sulfides
8:55 AM, Paper 101bImmobilisation of Thermophilic Enzymes within
Miniaturised Flow Reactors for Biotransformations
9:20 AM, Paper 101cApplication of Encapsulated Enzymes in a
Permeable Microscale Reactor
9:45 AM, Paper 101dContinuous Production of NADPH with Malic Enzyme
in Micro Scale
10:10 AM, Paper 101eDevelopment of Continuous Culture Microbioreactors
10:35 AM, Paper 101f**(102) Tuesday, Apr 8, 8:30 AM
CHARACTERIZATION AND SIMULATION - PART 1**

New Orleans Convention Center, Room 388

*Sponsored by: Topical 5: IMRET-10: 10th International
Conference on Microreaction Technology*Residence Time Distribution Studies in Microchannels
with Staggered Herringbone Structures
8:30 AM, Paper 102aEvaluation of Numerical Methods for Describing
Mass Transfer in Microstructured Devices Using
Experimentally Determined Residence Time
Distributions
8:55 AM, Paper 102bOptical Characterization of Viscosity-Dependent
Residence Time Distribution in the Static Micromixer
Statmix6
9:20 AM, Paper 102cCharacterization of Flow Regimes and Transport
Phenomena in Complex Microchannels
9:45 AM, Paper 102dIntermediate Reynolds Number Reactive Boundary
Layers in Catalytic Micro-Combustion Flows
10:10 AM, Paper 102eMass Transfer Characterization Inside Reactive
Droplets Flowing Through Microchannels
10:35 AM, Paper 102f**(103) Tuesday, Apr 8, 8:30 AM
SEPARATION**

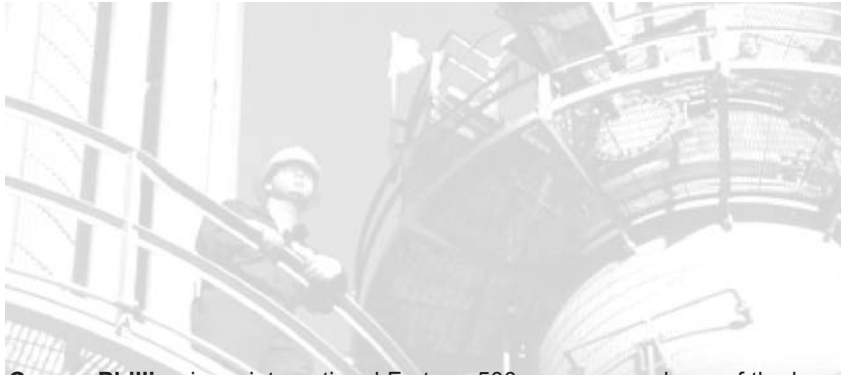
New Orleans Convention Center, Room 392

*Sponsored by: Topical 5: IMRET-10: 10th International
Conference on Microreaction Technology*Microchip-Based Sensitive and Fast Gas Analysis
System by Gas/Liquid Two Phase Flow and Thermal
Lens Microscope
8:30 AM, Paper 103aSeparation of Ethane-Ethylene in High Flux
Microchannels
8:55 AM, Paper 103bGucha-Gucha Extraction Microchip
9:20 AM, Paper 103cSynthesis of Porous Silica with Unique Morphology in
Narrow Passages Using the Ice Templating Method
9:45 AM, Paper 103dUsing Microreactors for Liquid-Liquid Extraction of
Vanillin
10:10 AM, Paper 103eApplication of Microchannel Device for Enrichment
of Electrolytes
10:35 AM, Paper 103f**(104) Tuesday, Apr 8, 8:30 AM
[SCHB] TOOLS FOR ENTREPRENEURS FROM THE
KAUFFMAN FOUNDATION I**

Hilton New Orleans Riverside, Compass

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Management Division*

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Process Engineers provide process technical expertise and services focused on technical support for Operations- troubleshooting, monitoring, and optimization to achieve optimum unit performance while maintaining and complying with safety and environmental standards. They are also responsible for process engineering design and support for project development activities within the Process Engineering Department. This position interfaces with all departments throughout the refinery including operations, maintenance, and planning and tech services. This position generally resides within the technical services department.

Process Control Engineers specialize in the application of control technology to meet and improve process control targets and utilization. They actively contribute to process control projects, which are strategic to the refinery, resulting in a positive impact on the business' bottom line. Candidates must have a demonstrated ability to understand, document, explain and transfer technical knowledge of control solutions for the support of MVPC controls and optimization. They contribute by bringing working knowledge and examples of what is possible from all segments of process control (process, instrumentation, and communications and controls technology). The selected candidate will be the central focal point for the day-to-day monitoring of process control schemes in the assigned area.

These positions also require that the successful candidate occasionally work outdoors in all kinds of weather; climb stairs (internal and external to heights); work safely from stationary and extension ladders to various heights; and work in a team based environment. The foregoing job requirements are not all inclusive and may be changed based upon business needs.

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(105) Tuesday, Apr 8, 8:30 AM**CHEMISTS AND CHEMICAL ENGINEERS: A POWERFUL TEAM FOR PROCESS DEVELOPMENT**

New Orleans Convention Center, Room 390

*Sponsored by: AIChE Led Co-Sponsored Sessions
Co-Sponsored by: Process Development Division*Introductory Remarks
8:30 AMBridging the Communication Gap between Engineers and Chemists
8:35 AM, Paper 105aPerspectives on Chemistry and Chemical Engineering in Process Development and Support
9:00 AM, Paper 105bGreen Chemistry: Designing Less Hazardous Chemical Products and Processes
9:25 AM, Paper 105cPreparing Product Cost Assessments with Limited Data
9:50 AM, Paper 105dTrace Chemistry and Manufacturing
10:15 AM, Paper 105eProcess Modeling and Design in Pharmaceutical R&D
10:40 AM, Paper 105f**(106) Tuesday, Apr 8, 8:30 AM****DEVELOPING ENVIRONMENTAL FORESIGHT THROUGH COMPUTATIONAL CHEMISTRY AND MODELING**

New Orleans Convention Center, Room 349

*Sponsored by: AIChE Led Co-Sponsored Sessions
Co-Sponsored by: Catalysis and Reaction Engineering Division*Prescreening for Environmentally-Important Properties through Computational Chemistry
8:30 AM, Paper 106aPrediction of Global Warming Potentials through Computational Chemistry: Testing Robustness of Methodology through Experimental Comparisons
8:55 AM, Paper 106bPredicting Ozone Formation in the Troposphere Using Mechanistic Modeling
9:20 AM, Paper 106cMathematical Modeling of Leaching of Heavy Metals from Biofilm Coated Cement Based Waste Forms
9:45 AM, Paper 106dPhosphorus Fractions and Phosphate Sorption Characteristics of Sediments from the Three-Gorges Reservoir (China) in Relation to the Environmental Conditions
10:10 AM, Paper 106eNew Mathematical Method for Prediction of Pollutant in River Simulated by Gas Chromatography Measurement
10:35 AM, Paper 106f**(107) Tuesday, Apr 8, 8:30 AM****GREEN CHEMISTRY & ENGINEERING - ALTERNATIVE SOLVENTS AND BIOAPPLICATIONS**

New Orleans Convention Center, Room 350

*Sponsored by: AIChE Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division*Green Chemistry Considerations in the Design of Ionic Liquids
8:35 AM, Paper 107aGuanidine/Alcohol and Amidine/Alcohol Switchable Solvent Mixtures
9:00 AM, Paper 107bScreening Ionic Liquids for Green Chemistry
9:25 AM, Paper 107cDevelopment and Characterization of Renewable Copolymers, Poly(glycerol-fumarate) and Poly(trimethylene-malonate) from By-Products of Biorefineries
10:05 AM, Paper 107dEnvironmentally-Friendly Glycerol Disposal Using Bacterial-Mediated Fermentation
10:30 AM, Paper 107eSilica Surface Modifications for Bioapplications
10:55 AM, Paper 107fGreen Catalytic Hydrogenolysis of Glycerol to Propylene Glycol Over a Promising Silica Supported Copper Catalyst
11:20 AM, Paper 107g**(108) Tuesday, Apr 8, 8:30 AM****HEAVY OIL CHEMISTRY II**

New Orleans Convention Center, Room 386

*Sponsored by: AIChE Led Co-Sponsored Sessions
Co-Sponsored by: Fuels and Petrochemicals Division*Characterization of Heavy Oil Polar Components by Solubility Separations
8:30 AM, Paper 108aSubfractionation of Asphaltenes from Brazilian Vacuum Residues
9:00 AM, Paper 108bAdsorption Studies of Heavy Molecules on Solids Sorbents
9:30 AM, Paper 108cCorrelation of Distillation and Nebulization Temperature of Bitumen by Use of Atmospheric Pressure Photoionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry
10:00 AM, Paper 108dHydrotreating and Catalytic Cracking of Bitumen-Derived Vacuum and Heavy Coker Gas Oils
10:30 AM, Paper 108eEstimation of Microcarbon Residue for Heavy Oils and Fractions
11:00 AM, Paper 108f**(109) Tuesday, Apr 8, 8:30 AM****INDUSTRIAL APPLICATIONS OF MICROWAVE AND RADIO FREQUENCY PROCESSING II**

New Orleans Convention Center, Room 290

*Sponsored by: AIChE Led Co-Sponsored Sessions*Industrial Microwave Systems: Important Tools for Increased Productivity
8:30 AM, Paper 109aOptimizing Performance and Minimizing Cost in Microwave Heating Systems
9:10 AM, Paper 109bApplication of Microwave Energy for Processing of a Variety of Materials: An Overview
9:50 AM, Paper 109cDielectric Property Measurement Over a Wide Range of Temperatures
10:30 AM, Paper 109dMicrowave Processing of Metals
11:10 AM, Paper 109e**(110) Tuesday, Apr 8, 8:30 AM****LIQUEFIED NATURAL GAS (LNG) - EQUIPMENT I**

New Orleans Convention Center, Room 389

*Sponsored by: AIChE Led Co-Sponsored Sessions,
Natural Gas Utilization
Co-Sponsored by: Fuels and Petrochemicals Division,
Topical 6: 8th Topical Conference on Natural Gas Utilization*Proposed Application of a Sterling-Cycle Energy Recovery System for LNG Boil-Off Ground Flare
8:30 AM, Paper 110aDevelopment of a Novel Full-String Test Facility for Two-Phase LNG Expanders
8:50 AM, Paper 110bRecent Developments in the Prediction and Optimization of the Mixing of Different Qualities of LNG in a Storage Tank
9:10 AM, Paper 110cThermodynamics of Liquid-Vapor Two-Phase Draft Tubes for Liquefied Gas Expanders
9:30 AM, Paper 110dDesign Considerations for Propane Condenser Approach Temperature in an Air Cooled LNG Plant
9:50 AM, Paper 110eA Study on the Improvement of Radiographic Test Method on 9% Ni Steel Welds for LNG Storage Tanks
10:10 AM, Paper 110fDetection and Measurement of Fugitive Methane Gas Emission Using Infrared Imaging Camera
10:30 AM, Paper 110g**(111) Tuesday, Apr 8, 8:30 AM****THERMODYNAMICS IN CHEMICAL ENGINEERING: PROSPECTS AND PERSPECTIVES - ENERGY AND THE ENVIRONMENT**

New Orleans Convention Center, Room 351

*Sponsored by: AIChE Led Co-Sponsored Sessions
Co-Sponsored by: Thermodynamics and Transport Properties*Development and Application of Advanced Molecular Simulation Methods for Computing the Properties of Ionic Liquids
8:30 AM, Paper 111aPerspectives and Challenges in Adsorption Science and Nanoporous Materials
9:05 AM, Paper 111b

◆ For Division Codes indicated in ACS led Co-Sponsored sessions, please refer to "Key to ACS Division Codes" on Page T40

Using Thermodynamic Properties from First-Principles Calculations to Accelerate the Search for Metal Hydride-Based Hydrogen Storage Materials
9:40 AM, Paper 111c

Using Molecular Modeling to Understand Enzymatic Cellulose Hydrolysis
10:15 AM, Paper 111d

Nonequilibrium Dynamics and the Electrostatic Charging of Granular Systems
10:50 AM, Paper 111e

(112) Tuesday, Apr 8, 8:30 AM
[ENVR] ADVANCES IN DRINKING WATER DISINFECTION AND DISINFECTION BYPRODUCT MANAGEMENT I
New Orleans Convention Center, Room 236

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division

(113) Tuesday, Apr 8, 8:30 AM
[ENVR] MEMBRANE TECHNOLOGY FOR WATER TREATMENT AND REUSE - ADVANCES IN MEMBRANE MATERIALS AND MEMBRANE SCIENCE
New Orleans Convention Center, Room 237

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division

(114) Tuesday, Apr 8, 9:00 AM
[COMSCI] PARTNERING FOR INNOVATION AND COMPETITIVENESS: OPPORTUNITIES FOR THE CHEMICAL ENTERPRISE IN ENERGY AND ENVIRONMENT I
New Orleans Convention Center, Room 210

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Management Division

(115) Tuesday, Apr 8, 9:00 AM
[CHAS] LABORATORY SAFETY INCIDENTS AND NEAR MISSES: CASE STUDIES AND LESSONS LEARNED I
New Orleans Convention Center, Room 336

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Topical 1: 42nd Loss Prevention Symposium

(116) Tuesday, Apr 8, 10:15 AM
HAZARDS OF ALTERNATIVE FUELS TECHNOLOGIES
New Orleans Convention Center, Rooms 356-357

Sponsored by: Topical 1: 42nd Loss Prevention Symposium
Co-Sponsored by: Loss Prevention & Process Safety

CNG and Hydrogen Vehicle Fuel Tank Failure Incidents, Testing, and Preventive Measures
10:15 AM, Paper 116a

Comparative Fire Risk of Motor Vehicle Fuels: Gasoline vs. E-85 Ethanol
10:45 AM, Paper 116b

NFPA Hydrogen Technologies Code Project
11:15 AM, Paper 116c

(117) Tuesday, Apr 8, 10:15 AM
KEY PERFORMANCE INDICATORS, PART II
New Orleans Convention Center, Rooms 353-355

Sponsored by: Topical 4: Center for Chemical Process Safety (CCPS) 23rd International Conference

The Use of the Pareto Shape Parameter as a Leading Indicator of Process Safety Performance
10:15 AM, Paper 117a

Applied Risk-Based Process Safety: A Consolidated Risk Register and Focus on Risk Communications
10:45 AM, Paper 117b

Hydrogen Pipeline Compressor Incident Changes Standard Procedures
11:15 AM, Paper 117c

(118) Tuesday, Apr 8, 1:30 PM
LAYERS OF PROTECTION ANALYSIS (LOPA)
New Orleans Convention Center, Rooms 353-355

Sponsored by: Topical 4: Center for Chemical Process Safety (CCPS) 23rd International Conference

Committing to Process Safety – A Reliance Experience
1:30 PM, Paper 118a

A LOPA Case Study
2:00 PM, Paper 118b

Use of Procedural Based Controls in Layer of Protection Analysis
2:30 PM, Paper 118c

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(119) Tuesday, Apr 8, 1:30 PM
[CHAS] LABORATORY SAFETY INCIDENTS AND NEAR MISSES: CASE STUDIES AND LESSONS LEARNED II
 New Orleans Convention Center, Room 336

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Topical 1: 42nd Loss Prevention Symposium

(120) Tuesday, Apr 8, 1:30 PM
ADVANCES IN FIRE AND EXPLOSION SUPPRESSION
 New Orleans Convention Center, Rooms 356-357

Sponsored by: Topical 1: 42nd Loss Prevention Symposium
Co-Sponsored by: Loss Prevention & Process Safety

Experimental Study of Effective Water Spray Curtain Application in Controlling LNG Vapor Clouds
 1:30 PM, Paper 120a

The Victaulic "Vortex" Multiple Agent Fire Extinguishing System
 2:00 PM, Paper 120b

Effects of System and Agent Properties on Room Pressurization
 2:30 PM, Paper 120c

Simulation of Explosion Suppression Systems and Extinguishing Barriers Using the CFD Code DESC
 3:30 PM, Paper 120d

Automatic Fire & Explosion Detection and Suppression for Special Hazards
 4:00 PM, Paper 120e

Advances in Explosion Suppression Product Safety, Reliability, and Performance
 4:30 PM, Paper 120f

(121) Tuesday, Apr 8, 1:30 PM
[COMP] COMPUTATIONAL CATALYSIS - SURFACES
 New Orleans Convention Center, Room 337

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Computational Molecular Science and Engineering Forum

(122) Tuesday, Apr 8, 1:30 PM
CONDUCT OF OPERATIONS FOR PROCESS SAFETY
 New Orleans Convention Center, Room 352

Sponsored by: Topical 3: 10th Process Plant Safety Symposium

Improving Process Safety by Addressing the Human Element
 1:30 PM, Paper 122a

Evaluating Operational Discipline in PSM Audits
 2:00 PM, Paper 122b

RAM Modeling and Operations Performance Standards
 2:30 PM, Paper 122c

Break
 3:00 PM

PSM Knowledge Management and Applications across Sister Plant Technologies
 3:30 PM, Paper 122d

"Yellow Lining" for Re-Commissioning and Start-up
 4:00 PM, Paper 122e

Process Safety: "Walk through Review"
 4:30 PM, Paper 122f

(123) Tuesday, Apr 8, 1:30 PM
[ENVR] ADVANCES IN ABIOTIC TRANSFORMATION PROCESSES FOR MICROPOLLUTANTS IN DRINKING WATER AND FOR SOURCEWATER PROTECTION I
 New Orleans Convention Center, Room 237

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division

(124) Tuesday, Apr 8, 1:30 PM
[ENVR] ADVANCES IN DRINKING WATER DISINFECTION AND DISINFECTION BYPRODUCT MANAGEMENT II
 New Orleans Convention Center, Room 236

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division

(125) Tuesday, Apr 8, 1:30 PM
[FUEL] HYBRID NANOTECHNOLOGIES FOR AN ENHANCED CO₂ FIXATION - CO₂ CONVERSION INTO PRODUCTS OF THE CHEMICAL AND ENERGY INDUSTRY: HETEROGENEOUS CATALYSIS
 New Orleans Convention Center, Rooms 240-241

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Fuels and Petrochemicals Division

(126) Tuesday, Apr 8, 1:45 PM
[FUEL] CLEAN ENERGY, FUELS AND CHEMICALS FROM BIOMASS - BIOMASS PYROLYSIS FOR THE PRODUCTION OF FUELS AND CHEMICALS
 New Orleans Convention Center, Room 239

Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Fuels and Petrochemicals Division

(127) Tuesday, Apr 8, 2:00 PM
[SCHB] BEST STEPS FOR THE CHEMICAL ENTREPRENEUR I
 Hilton New Orleans Riverside, Compass

Sponsored by: ACS Led Co-Sponsored Session
Co-Sponsored by: Management Division

(128) Tuesday, Apr 8, 2:00 PM
CHARACTERIZATION AND SIMULATION - PART 2
 New Orleans Convention Center, Room 388

Sponsored by: Topical 5: IMRET-10: 10th International Conference on Microreaction Technology

Manipulating Homogeneous Chemistry in Catalytic Microreactors: Operation Strategies and Design Principles
 2:00 PM, Paper 128a

In-Situ Cast Micro Reactor Catalyst Supports for Methanol Reforming
 2:25 PM, Paper 128b

Ignition Strategies for Catalytic Microdevices
 2:50 PM, Paper 128c

Fluid Distribution and Blockage Diagnosis in Parallel Microchannel Configurations
 3:15 PM, Paper 128d

Process Simulation of a Pilot Case: Production of Perfume-Containing Microcapsules
 3:40 PM, Paper 128e

(129) Tuesday, Apr 8, 2:00 PM
MIXING, MASS TRANSFER AND HEAT EXCHANGE - PART 2
 New Orleans Convention Center, Room 392

Sponsored by: Topical 5: IMRET-10: 10th International Conference on Microreaction Technology

Pressure Drop in the Micro T-Junctions
 2:00 PM, Paper 129a

Mixing Performance of T-Shaped and Zigzag-Shaped Microreactors
 2:25 PM, Paper 129b

Characterization of High Heat and Mass Transfer in T-Shaped Microreactors and Its Optimal Design
 2:50 PM, Paper 129c

Multiphase Mixing with Disrupted Flow for Enhanced Interfacial Area
 3:15 PM, Paper 129d

On the Scalability of Microstructured Multilamination Mixing Devices
 3:40 PM, Paper 129e

A Multi-Objective Analysis and Optimization Methodology for the Design of Passive Micromixers for Different Mixing Requirements
 4:05 PM, Paper 129f

(130) Tuesday, Apr 8, 2:00 PM
POLYREACTIONS / FINE CHEMICALS AND PHARMACEUTICALS SYNTHESIS AND PRODUCTION - PART 3
 New Orleans Convention Center, Room 391

Sponsored by: Topical 5: IMRET-10: 10th International Conference on Microreaction Technology

Screening and Optimization in a Microreactor Platform
 2:00 PM, Paper 130a

Well-Defined Hyperbranched and Linear Polymers by Anionic Polymerization in Continuous Flow
 2:25 PM, Paper 130b

Improvement of Molecular Weight Distribution in Synthesis of Liquid Polymers for Reactive Resins by Micro Flow-through Polymerization
 2:50 PM, Paper 130c

Synthesis of Ultrahigh Molecular Weight Polymer in a Catalytic Nanotube Polymerization Reactor
 3:15 PM, Paper 130d

Filled Interpenetrating Polymer Nanonetworks Based on Polyurethane Ionomer
 3:40 PM, Paper 130e

SIPROCESS - A Micro Process System for Process Development and Production
 4:05 PM, Paper 130f

Modular Micro Process Technology - New Devices and Applications
 4:30 PM, Paper 130g

Compact Heat Exchange Reactor
 4:55 PM, Paper 130h

◆ For Division Codes indicated in ACS led Co-Sponsored sessions, please refer to "Key to ACS Division Codes" on Page T40

(131) Tuesday, Apr 8, 2:00 PM
CONTROL AND OPTIMIZATION IN REFINING II
New Orleans Convention Center, Room 387

Sponsored by: Topical 7: 11th Topical on Refinery Processing

Back to the Basics - Process Control Diagnostics Improves Refinery Performance
2:00 PM, Paper 131a

Modern Loop Tuning Tutorial
3:00 PM, Paper 131b

Troubleshooting of Oscillatory Control Loops
4:00 PM, Paper 131c

PID Controller Design for Constrained Optimal Control of Inventory Loop
4:30 PM, Paper 131d

(132) Tuesday, Apr 8, 2:00 PM
ETHYLENE PLANT SAFETY ROUNDTABLE DISCUSSION
New Orleans Convention Center, Rooms 393-394

Sponsored by: Topical 2: The 20th Ethylene Producers' Conference

Introductory Remarks
2:00 PM

Damaging Mechanisms in Ethylene Plant
2:05 PM, Paper 132a

Break
3:05 PM

Plant Ageing
3:25 PM, Paper 132b

Damage Mechanisms and Risk in An Ethylene Plant
3:55 PM, Paper 132c

Panel Discussion
4:25 PM

Concluding Remarks
4:55 PM

(133) Tuesday, Apr 8, 2:00 PM
FUNDAMENTALS AND TECHNOLOGY OF ETHYLENE PRODUCTION — PAPER SESSION
New Orleans Convention Center, Rooms 395-396

Sponsored by: Topical 2: The 20th Ethylene Producers' Conference

Welcoming and Introductory Remarks
2:00 PM

Taking Optimal Advantage of Feedstock Flexibility with COILSIM1D
2:15 PM, Paper 133a

Emissshield: Application to Pyrolysis Furnaces
2:40 PM, Paper 133b

Catalyzed-Assisted Manufacture of Olefins (CAMOL): Realizing Novel Operational Benefits from Furnace Coil Surfaces
3:05 PM, Paper 133c

Break
3:30 PM

Front End CDhydro® Raw Gas Hydrogenation Achieved
3:45 PM, Paper 133d

Increasing the Propylene Yield: Converting the Butene in Mixed Butane Butene Streams (raff-2) into Propylene and Linear Internal Olefins
4:10 PM, Paper 133e

Integrating CPT with Existing OCT Units
4:35 PM, Paper 133f

Concluding Remarks
5:00 PM

(134) Tuesday, Apr 8, 2:00 PM
GLOBAL CLIMATE CHANGE: LEGISLATION, REGULATION AND POLICY
New Orleans Convention Center, Room 297

Sponsored by: AIChE Led Co-Sponsored Sessions Co-Sponsored by: Environmental Division

Preparing for Greenhouse Gas Regulations
2:00 PM, Paper 134a

Carbon Trading: Enhancing Business Value through Carbon Reductions
2:20 PM, Paper 134b

Monetizing Greenhouse Gas Emission Reductions: Opportunities in Carbon Trading
2:40 PM, Paper 134c

AIChE Spring Meeting Demonstrations and Information @ Booth # 1216

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The Countdown to Greenhouse Gas Management
3:00 PM, Paper 134d

Panel Discussion
4:40 PM

(135) Tuesday, Apr 8, 2:00 PM

GREEN CHEMISTRY & ENGINEERING - CHEMISTRY AND INDUSTRIAL ECOLOGY

New Orleans Convention Center, Room 350

*Sponsored by: AIChE Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division*

Introductory Remarks
2:00 PM

Aqueous Reaction and Processing in Suzuki-Miyaura Couplings Using Immobilized Palladium Catalysts in a Phosphine-Free System
2:05 PM, Paper 135a

Direct Epoxidation of Propene Over Gold Catalysts: Kinetics of Epoxidation and Water Formation
2:30 PM, Paper 135b

Water (Resource) Conservation Using Closed-Loop, Evaporative Cooling Systems for Process, Power, and Refining Applications
2:55 PM, Paper 135c

New Type of Organic-Clay Intercalative Materials for Gene Delivery System
3:20 PM, Paper 135d

Break
3:45 PM

High Quality Base Oil Production Via the Hylube Process
4:00 PM, Paper 135e

Efficient Degradation of Organic Pollutants Promoted by Hydrogen Peroxide Electrogenerated IN Situ
4:25 PM, Paper 135f

Removal of SO₂ and NO Simultaneously from Flue Gas Based on TiO₂ Photocatalytic Oxidation
4:50 PM, Paper 135g

(136) Tuesday, Apr 8, 2:00 PM

GREEN CHEMISTRY & ENGINEERING POSTER SESSION

New Orleans Convention Center, Room 351

*Sponsored by: AIChE Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division*

Nitrone Cycloaddition Reactions in the Micellar System
Paper 136a

Synthesis of New Types Gemini Ionic Liquids
Paper 136b

Synthesis of Aryl Esters and α,β -Alkynyl Ketones Via Palladium on Charcoal Catalyzed Carbonylation of Aryl Iodides
Paper 136c

Physical and Chemical Cellulose Surface Modification
Paper 136d

Effects of Ferrous Ions on Reduction of Nitrobenzene in Aqueous Solution by Zero-Valent Iron
Paper 136e

Coupling Multistage Distillation and Pervaporation
Paper 136f

Self-Diffusion of Monovalent Ions in Highly Concentrated Liquid and Solid Electrolytes
Paper 136g

Pervaporation - Esterification Coupling
Paper 136h

Rheological Behavior and Drug-Controlled Release Property of Chitosan/Rectorite Nanocomposites
Paper 136i

Pulp Physical Property Improvement with LMS in TCF Bleaching of Masson Pine Kraft Pulp
Paper 136j

(137) Tuesday, Apr 8, 2:00 PM

HEAVY OIL CHEMISTRY III

New Orleans Convention Center, Room 386

*Sponsored by: AIChE Led Co-Sponsored Sessions
Co-Sponsored by: Fuels and Petrochemicals Division*

Emulsion Characterization by Ultrahigh Resolution FT-ICR Mass Spectrometry
2:00 PM, Paper 137a

Water-Extractable Components from Heavy Crude
2:30 PM, Paper 137b

Liquid-Phase Decarboxylation of Naphthenate Acids in Oil
3:00 PM, Paper 137c

Adsorption of Virgin and Thermal Cracked Asphaltenes for Gasification
3:30 PM, Paper 137d

User Controlled Kinetic Network Generation with Ingen
4:00 PM, Paper 137e

Kinetic Study of Extra Heavy Crude Oil Upgrading Using Hydrogen Donors Under Cyclic Steam Injection Conditions
4:30 PM, Paper 137f

(138) Tuesday, Apr 8, 2:00 PM

KERN AWARD LECTURE SESSION

New Orleans Convention Center, Room 289

*Sponsored by: Transport and Energy Processes
Co-Sponsored by: Topical B: Energy Processes*

(139) Tuesday, Apr 8, 2:00 PM

KINETICS AND TRANSPORT PROPERTIES

New Orleans Convention Center, Room 288

Sponsored by: Thermodynamics and Transport Properties

A Group Contribution Based-Model to Estimate Free Volume in Amorphous Polymers for Solvent Diffusion
2:00 PM, Paper 139a

A New Methodology for the Determination of Homogeneous Diffusion Coefficients of Biomolecules in Adsorbents Via Non-Equilibrium Modeling
2:20 PM, Paper 139b

Molecular Modeling Study of Adsorption and Diffusion of Mixed Gases in CuBTC Metal Organic Framework
2:40 PM, Paper 139c

Liquid Injection into Fluidized Beds
3:00 PM, Paper 139d

Kinetics of Noncatalytic Water Gas Shift Reaction in a Supercritical Water Medium
3:20 PM, Paper 139e

High Throughput of Non-Steady-State Catalytic Activity Characteristics Using Temporal Analysis of Products
3:40 PM, Paper 139f

Radiolysis Induced Mobility of Chloride Ions in Zeolite
4:00 PM, Paper 139g

The Kinetics of Chlorine Evolution on Dimensionally Stable Anode (DSA) Used in the Chlor-Alkali Industry
4:20 PM, Paper 139h

(140) Tuesday, Apr 8, 2:00 PM

LIQUEFIED NATURAL GAS (LNG) - EQUIPMENT II

New Orleans Convention Center, Room 389

*Sponsored by: AIChE Led Co-Sponsored Sessions, Natural Gas Utilization
Co-Sponsored by: Fuels and Petrochemicals Division, Topical 6: 8th Topical Conference on Natural Gas Utilization*

Affinity Law Deviations in High Pressure LNG Pump Performance
2:00 PM, Paper 140a

Practical Configuration of Large Scale Refrigerant Compressors
2:20 PM, Paper 140b

Cost and Drivers for LNG Plant/Terminal Site Preparation and Foundations
2:40 PM, Paper 140c

Modeling of an Industrial Gas Processing Unit Considering Environmental and Economic Impacts
3:00 PM, Paper 140d

Reliable Thermodynamic Data for Improving LNG Scrub Column Design
3:20 PM, Paper 140e

Marine Boil-off Gas Recovery Improvement by Performing Slow Loading at Bontang LNG Terminal
3:40 PM, Paper 140f

Power Recovery in LNG Regasification Plants
4:00 PM, Paper 140g

(141) Tuesday, Apr 8, 2:00 PM

MULTI-COMPONENT CONTROL IN POWER GENERATION

New Orleans Convention Center, Room 397

Sponsored by: Research and New Technology Committee

Mercury Control Strategy in Power Generation
2:00 PM, Paper 141a

Adsorbents for Reduction of Multiple Toxic Metals in Coal-Based Power Generation
2:30 PM, Paper 141b

Palladium Sorbents for High Temperature Capture of Mercury, Arsenic, and Selenium from Fuel Gas
3:00 PM, Paper 141c

◆ For Division Codes indicated in ACS led Co-Sponsored sessions, please refer to "Key to ACS Division Codes" on Page T40

UC Sulfur Recovery Process – An Integrated Multi-Contaminant Removal
3:30 PM, Paper 141d

(142) Tuesday, Apr 8, 2:00 PM
NEW TRENDS AND BEST PRACTICES IN PROCESS DEVELOPMENT

New Orleans Convention Center, Room 390
Sponsored by: AIChE Led Co-Sponsored Sessions
Co-Sponsored by: Pilot Plants

Introductory Remarks
2:00 PM

Hydroformylation and Carbonylation Processes: New Trends in Synthesis of Fine Chemicals and Pharmaceuticals
2:05 PM, Paper 142a

Pilot Plant Scaling: Engineering and Chemistry Considerations
2:30 PM, Paper 142b

Chemistry and Catalysis in Process Development
2:55 PM, Paper 142c

Scale up of the Epoxidation of H₂-O₂-C₃H₈-C₃H₆ Mixtures in Jet-Loop Reactor System
3:20 PM, Paper 142d

Enhanced Production of Laccase from *Flammulina velutipes* and Its Application in Biobleaching of Kraft Bamboo Pulp
3:45 PM, Paper 142e

(143) Tuesday, Apr 8, 2:00 PM
PETROCHEMICALS AND DERIVATIVES II
New Orleans Convention Center, Room 385

Sponsored by: Petrochemicals & Derivatives

Introductory Remarks
2:00 PM

1-Octene from Butadiene – New Technology Based on Heterogeneous Catalysts
2:05 PM, Paper 143a

Thermodynamic Prediction of the Olefin Product Distribution in the Fischer-Tropsch Synthesis
2:30 PM, Paper 143b

Intermittent Feeding of Synthesis Gas into Series FT Reactors
2:55 PM, Paper 143c

Microalgae Cultivation in Bioreactors for CO₂ Mitigation from Power Plants Flue Gas and Fuel Production by Supercritical CO₂ Extraction
3:20 PM, Paper 143d

High Temperature Co-Electrolysis of Steam and Carbon Dioxide to Produce Synthesis Gas for Fischer Tropsch Synthetic Fuels
3:45 PM, Paper 143e

Kinetics of Heterogeneously Catalyzed Triglyceride Transesterification: A New Simulation Framework for Biodiesel Production
4:10 PM, Paper 143f

Development of Petrol-Alcohol-Water Microemulsion Fuel as a Substitute for Petrol and Ethanol-Blended Petrol
4:35 PM, Paper 143g

Indalin+: A New Process for Production of Auto LPG and High Quality Gasoline
5:00 PM, Paper 143h

(144) Tuesday, Apr 8, 2:00 PM
REACTION ENGINEERING AND CATALYSIS: GENERAL
New Orleans Convention Center, Room 349

Sponsored by: Catalysis and Reaction Engineering Division

Dramatic Micellar Catalysis on the Characteristics of B-Z Oscillatory Reaction with Citric Acid
2:00 PM, Paper 144a

Oxidative Coupling of Methane on BaTiO₃ Perovskites Partially Substituted with Germanium
2:25 PM, Paper 144b

Activated Carbon Supported Catalysts and Adsorbents for WGS Reaction
2:50 PM, Paper 144c

Needle in a Haystack Catalysis - An Experimental Study Using Temporal Analysis of Products (TAP)
3:15 PM, Paper 144d

Rapid Lauroylation of Wheat Straw Hemicelluloses Under Microwave Heating
3:40 PM, Paper 144e

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Photocatalytic Oxidation of Isoproturon, Simazine and Propazine in a Solar Fountain Photoreactor Network
4:05 PM, Paper 144f

Thermodynamics & Kinetics of the Erbium-Hydrogen System
4:30 PM, Paper 144g

(145) Thursday, Apr 10, 8:30 AM

SEPARATIONS: THERMOSIPHONS

New Orleans Convention Center, Room 384

Sponsored by: Separations Division

Thermosiphon Reboilers
8:30 AM, Paper 145a

(146) Tuesday, Apr 8, 2:00 PM

SITE MANAGEMENT: PREPARING FOR NATURAL DISASTERS AND LESSONS LEARNED

New Orleans Convention Center, Room 290

Sponsored by: Management Division

Introductory Remarks
2:00 PM

Hurricane Timeline Tools for Objectively Triggering Action Items in Hurricane Response Plans
2:10 PM, Paper 146a

Performance of and Mitigation Options for Vulnerable Plant Components
2:45 PM, Paper 146b

Improving Checklist with Predictive Failure Analysis
3:20 PM, Paper 146c

(147) Tuesday, Apr 8, 3:30 PM

INHERENT SAFETY

New Orleans Convention Center, Rooms 353-355

Sponsored by: Topical 4: Center for Chemical Process Safety (CCPS) 23rd International Conference

Improvements in the Safety Screening of Resin Manufacturing Processes
3:30 PM, Paper 147a

Inherent Risk Assessment
4:00 PM, Paper 147b

Application of an Emergency Egress Risk Index System and Layer of Protection Analysis for Determining Life Safety Requirements for Open Structure Industrial Occupancies
4:30 PM, Paper 147c

(148) Tuesday, Apr 8, 5:00 PM

GLOBAL CONGRESS ON PROCESS SAFETY - JOINT POSTER SESSION AND RECEPTION

New Orleans Convention Center, Hall E-2

*Sponsored by: Topical 1: 42nd Loss Prevention Symposium
Co-Sponsored by: Topical 3: 10th Process Plant Safety Symposium, Topical 4: Center for Chemical Process Safety (CCPS) 23rd International Conference, Loss Prevention & Process Safety*

Prediction of the Source Location and Rate of a Chemical Release for Emergency Response: Backtrajectory Approach
Paper 148a

Passive Device Technology: The Trend Away from Reliance upon Valving Systems to Address Line Failure
Paper 148b

Solvent Processes – Hazards and Recent Incidents' Analyses
Paper 148c

Risk Based Method to Establish Inspection Intervals for PRDs
Paper 148d

Chemical Safety Database - Application for Explosion Limits of Biogases
Paper 148e

Development of a Methodology for Toxic and Flammable Gases Sensors Positioning in Oil Platforms
Paper 148f

A Graphical Approach for Representing Hazard Scenarios
Paper 148g

Carver+Shock: Food Defense Software Development, Application and Technical Needs
Paper 148h

How to Apply Process Safety Management to Capital Projects
Paper 148i

An Explosion in Skid Mounted Hydrogen Compressor Panel
Paper 148j

Electrical Flash and Fire in Sub-Station
Paper 148k

Case Study of a Hydrogen Explosion in An Electrical Panel
Paper 148l

Chemically Unstable Gases – Flammability of Ethylene Oxide Mixtures in Sterilization Processes
Paper 148m

Effects of Polyethylene Size on Ignition of Electrostatics Discharge
Paper 148n

GE Gas Turbine Design in O&G Applications According to IEC62061 Requirements vs CE Marking
Paper 148o

Domino Effects Research in the Safety Assessment of Petrochemical Enterprises
Paper 148p

Robust and Reliable Modeling for a Distillation Column
Paper 148q

Specialized Working Procedure
Paper 148r

Obstacle Effects on Vented Gas Explosion Pressures
Paper 148s

(149) Tuesday, Apr 8, 6:00 PM

[POLY] FUNCTIONAL NANOMATERIALS FROM NEW POLYMER SYNTHETIC METHODOLOGIES - POSTER SESSION

New Orleans Convention Center, Hall A

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Materials Engineering and Sciences Division*

(150) Wednesday, Apr 9, 8:00 AM

PROCESS SAFETY MANAGEMENT

New Orleans Convention Center, Rooms 353-355

Sponsored by: Topical 4: Center for Chemical Process Safety (CCPS) 23rd International Conference

The Benefits of Comparing Similar Hazards across 'Sister' Plants
8:00 AM, Paper 150a

Management of Organizational Change
8:30 AM, Paper 150b

Recent Developments in the Analysis of Fires, Explosions and Production Disruption Incidents in Chemical Plants and Oil Refineries
9:00 AM, Paper 150c

(151) Wednesday, Apr 9, 8:00 AM

ETHYLENE PLANT PROCESS CONTROL — PAPER SESSION

New Orleans Convention Center, Rooms 393-394

*Sponsored by: Topical 2: The 20th Ethylene Producers' Conference
Co-Sponsored by: Systems and Process Control*

Welcoming Remarks
8:00 AM

20 Year Reflections
8:10 AM

An Optimization Program in Lyondell
8:20 AM, Paper 151a

Implementation of Unit-Wide Advanced Process Control in an Ethylene Plant
8:45 AM, Paper 151b

Overcoming Numerical Ill-Conditioning in a DMCplus® Composite Controller at the Baton Rouge Chemical Plant
9:10 AM, Paper 151c

Break
9:35 AM

Dynamic Instabilities of Two Parallel Integral Superheaters to Vaporize NGI Feed to Olefins Cracking Furnaces
9:55 AM, Paper 151d

Securing the Control System Against Improper Change after Alarm Rationalization
10:20 AM, Paper 151e

Process Control Systems Lifecycle Management
10:45 AM, Paper 151f

Concluding Remarks
11:00 AM

(152) Wednesday, Apr 9, 8:00 AM

INCIDENT ANALYSIS AND MANAGEMENT SYSTEMS

New Orleans Convention Center, Rooms 356-35

*Sponsored by: Topical 1: 42nd Loss Prevention Symposium
Co-Sponsored by: Loss Prevention & Process Safety*

◆ For Division Codes indicated in ACS led Co-Sponsored sessions, please refer to "Key to ACS Division Codes" on Page T40

Oops, Sorry! and Other Safety System War Stories
8:00 AM, Paper 152a

Analysis of One Company's Process Safety
Incidents
8:30 AM, Paper 152b

Investigating Beyond the Human Machinery-A
Closer Look at True Accident Causation in High
Hazard Industries
9:00 AM, Paper 152c

Break
9:30 AM

Learning from Incidents - A Practical Application
10:15 AM, Paper 152d

What I Learned as an Investigator with the CSB,
Part 2, Effective Investigation
10:45 AM, Paper 152e

Using Measured Performance as a Process Safety
Leading Indicator
11:15 AM, Paper 152f

(153) Wednesday, Apr 9, 8:00 AM
HAZARD IDENTIFICATION AND RISK ASSESSMENT TOOLS
New Orleans Convention Center, Room 352

*Sponsored by: Topical 3: 10th Process Plant Safety
Symposium*

LOPA Misapplied Common Errors Can Lead to
Incorrect Conclusions
8:00 AM, Paper 153a

Evaluating Protection Layers That Are Not
Independent
8:30 AM, Paper 153b

"Managing the Intolerable"
9:00 AM, Paper 153c

Process Infrastructure Hazards Analysis and Facility
Siting
10:15 AM, Paper 153d

A Semi-Quantitative Risk Assessment Methodology
to Address Deficiencies
10:45 AM, Paper 153e

Expanding Known Process Safety and Risk Analysis
Concepts to Manage Security Concerns
11:15 AM, Paper 153f

(154) Wednesday, Apr 9, 8:00 AM
**[COMP] COMPUTATIONAL EVALUATION OF RATE
CONSTANTS I**
New Orleans Convention Center, Room 337

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Computational Molecular Science
and Engineering Forum*

(155) Wednesday, Apr 9, 8:20 AM
[PHYS] NANOSTRUCTURED MATERIALS - ENERGY II
New Orleans Convention Center, Rooms 338-339

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Nanoscale Science and
Engineering Forum*

(156) Wednesday, Apr 9, 8:20 AM
**[PHYS] MULTISCALE MODELING IN BIOPHYSICS -
BIOMOLECULAR COMPLEXES: DYNAMICS, ASSEMBLY,
AND FUNCTION I**
New Orleans Convention Center, Room 346

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Thermodynamics and Transport
Properties*

(157) Wednesday, Apr 9, 8:25 AM
[FUEL] ULTRACLEAN TRANSPORTATION FUELS I
New Orleans Convention Center, Room 238

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Fuels and Petrochemicals Division*

(158) Wednesday, Apr 9, 8:25 AM
**[ANYL] DIRECTED ASSEMBLIES USING SURFACE
TEMPLATES I**
New Orleans Convention Center, Room 335

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Materials Engineering and
Sciences Division*

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(159) Wednesday, Apr 9, 8:25 AM
[CINF] ENGINEERING THE TRANSITION TO THE BIOECONOMY - COMMERCIALIZATION
 Marriott Convention Center, Blaine Kern D

*Sponsored by: ACS Led Co-Sponsored Sessions
 Co-Sponsored by: Sustainable Engineering Forum*

(160) Wednesday, Apr 9, 8:30 AM
PROGRESS IN THE COMMERCIALIZATION OF MICRO PROCESS TECHNOLOGY - PANEL DISCUSSION
 New Orleans Convention Center, Rooms 391-392

Sponsored by: Topical 5: IMRET-10: 10th International Conference on Microreaction Technology

Panelists
 8:30 AM, Paper 160a

(161) Wednesday, Apr 9, 8:30 AM
ETHYLENE PLANT MAINTENANCE & RELIABILITY
 New Orleans Convention Center, Rooms 395-396

Sponsored by: Topical 2: The 20th Ethylene Producers' Conference

Welcoming Remarks
 8:30 AM

Refractory Life Cycle Considerations in Ethylene Cracking Heaters
 8:40 AM, Paper 161a

Incorporating Reliability, Availability and Maintainability (RAM) into Process Synthesis
 9:05 AM, Paper 161b

Break
 9:45 AM

Transfer Line Exchangers in Ethylene Furnaces: Operating and Reliability Experience
 10:05 AM, Paper 161c

Failure Analysis and Reliability of Ethylene Furnace Components
 10:30 AM, Paper 161d

Progression of Environmentally Driven Heat Exchanger Maintenance Practices for Olefins Plants
 10:55 AM, Paper 161e

Closing Remarks
 11:20 AM

(162) Wednesday, Apr 9, 8:30 AM
LIQUEFIED NATURAL GAS (LNG) - SAFETY I
 New Orleans Convention Center, Room 389

*Sponsored by: AIChE Led Co-Sponsored Sessions, Natural Gas Utilization
 Co-Sponsored by: Fuels and Petrochemicals Division, Topical 6: 8th Topical Conference on Natural Gas Utilization*

Design of Safe LNG Regasification Terminals
 8:30 AM, Paper 162a

LNG Vapor Dispersion Research Needs
 8:50 AM, Paper 162b

Managing Escalation Risks in LNG Terminals
 9:10 AM, Paper 162c

Experimental Study of Effective Water Spray Curtain Application in Dispersing LNG Vapor Clouds
 9:30 AM, Paper 162d

A Study on Quantitative Risk Assessment Model for LNG Storage Tank
 9:50 AM, Paper 162e

High Expansion Foam 3-D Temperature Profile During Application on LNG: Experimental Results
 10:10 AM, Paper 162f

(163) Wednesday, Apr 9, 8:30 AM
DISTILLATION: PROCESSES AND MODELING I
 New Orleans Convention Center, Room 384

Sponsored by: Topical 8: Distillation Topical

Robust and Reliable Modeling for a Distillation Column
 8:30 AM, Paper 163a

A New Model for Distillation Simulation
 9:00 AM, Paper 163b

Simplified Modeling of Crude Oil Distillation Columns Meeting Refining Product Specifications
 9:30 AM, Paper 163c

Study of Dynamic Open Loop Responses of a Dividing Wall Column for Various Feed Conditions
 10:00 AM, Paper 163d

CFD Study for Liquid Distributor in Crude Fractionators
 10:30 AM, Paper 163e

Temperature Collocation Method for Design of Complex Distillation Column
 11:00 AM, Paper 163f

(164) Wednesday, Apr 9, 8:30 AM
ENERGY AND ENVIRONMENT MANAGEMENT PROGRAMS I
 New Orleans Convention Center, Room 297

Sponsored by: Management Division

Potential Process Plant Impacts from Regulating CO₂ as a Pollutant
 8:30 AM, Paper 164a

Economics of Plant Energy Saving Projects in a Changing Market
 8:55 AM, Paper 164b

Managing Greenhouse Gas Emissions Via Co-Utilization of Biomass and Coal: A Compliance Strategy
 9:20 AM, Paper 164c

Effect of Availability on Multi-Period Planning of Oil and Gas Production Systems
 9:45 AM, Paper 164d

Chevron Phillips Cuts Energy Use with KBC's Strategic Review
 10:30 AM, Paper 164e

Panel Discussion
 10:30 AM

(165) Wednesday, Apr 9, 8:30 AM
ENERGY - I
 New Orleans Convention Center, Room 387

Sponsored by: Topical 7: 11th Topical on Refinery Processing

Revamp of Heat-Integrated Crude Oil Distillation Systems for Energy Reduction and New Product Demands
 8:30 AM, Paper 165a

Heat Integration in a Crude Distillation Unit Using Pinch Analysis Concepts
 8:55 AM, Paper 165b

Reducing Energy Consumption by New Distillation Configuration
 9:20 AM, Paper 165c

Exploiting the Use of Compact Heat Exchangers on Preheating Trains
 9:45 AM, Paper 165d

Modeling Asphaltene Precipitation in Crude Oil Systems
 10:10 AM, Paper 165e

Automated Heat Exchanger Network Design for Process Streams with Temperature-Dependent Thermal Properties
 10:35 AM, Paper 165f

(166) Wednesday, Apr 9, 8:30 AM
FOULING MITIGATION I
 New Orleans Convention Center, Room 386

*Sponsored by: AIChE Led Co-Sponsored Sessions
 Co-Sponsored by: Fuels and Petrochemicals Division*

Isokinetic Phenomena in Crude Oil Fouling
 8:30 AM, Paper 166a

Design Approach for Mitigating Fouling of Reboilers and F/E Exchangers
 9:30 AM, Paper 166b

Heat Exchanger Performance Enhancement through the Use of Tube Inserts
 10:00 AM, Paper 166c

Investigation of Fouling of Crudes with Low Asphaltenes
 10:30 AM, Paper 166d

Thermodynamic Model of Sediment Deposition in the LC-FINING Process
 11:00 AM, Paper 166e

(167) Wednesday, Apr 9, 8:30 AM
HEALTH, SAFETY AND ENVIRONMENTAL INCIDENT MANAGEMENT
 New Orleans Convention Center, Room 290

Sponsored by: Information Technology

Using Process Historians to Detect Incidents
 8:30 AM, Paper 167a

Developing a Reporting System for Environmental Health, Safety and Environmental Reporting
 8:50 AM, Paper 167b

Avoiding Unstable Startup and Incidents Using Dynamic Simulation
 9:10 AM, Paper 167c

The Chemical Engineer's Role in Assessing Compliance Programs of the Chemical Process Industry
9:30 AM, Paper 167d

(168) Wednesday, Apr 9, 8:30 AM
HYDROGEN PRODUCTION I
New Orleans Convention Center, Room 350

*Sponsored by: AIChE Led Co-Sponsored Sessions, Natural Gas Utilization
Co-Sponsored by: Fuels and Petrochemicals Division, Topical 6: 8th Topical Conference on Natural Gas Utilization*

Hydrogen Generation Process
8:30 AM, Paper 168a

Low-Cost High-Efficiency Distributed Hydrogen Production
8:55 AM, Paper 168b

A Study of Steam Reforming of Ethanol for Hydrogen Production: Technical and Experimental Analysis Utilizing NiCu/Al₂O₃
9:20 AM, Paper 168c

A Preliminary Physical-Chemical Analysis of Steam Reforming of Biogas from a Small Wastewater Treatment System of a University Campus
9:45 AM, Paper 168d

Biomass to Biofuels: Catalytic Conversion of Biomass-Derived Synthesis Gas to Oxygenates
10:10 AM, Paper 168e

(169) Wednesday, Apr 9, 8:30 AM
LIGHT HYDROCARBON PROCESSING
New Orleans Convention Center, Room 385

Sponsored by: Topical 7: 11th Topical on Refinery Processing

Tutorial: Light Naphtha Isomerization
8:30 AM, Paper 169a

Options for Gasoline Pool Benzene Management
9:30 AM, Paper 169b

Options for Increased Alkylate Production and Lower HF Acid Inventory in HF Alkylation Units
10:00 AM, Paper 169c

Benzene Regulations and the Refinery H₂ Balance
10:30 AM, Paper 169d

(170) Wednesday, Apr 9, 10:00 AM
MICROFLUIDICS AND MICROREACTOR APPLICATIONS TO ENERGY GENERATION
New Orleans Convention Center, Room 289

Sponsored by: Topical B: Energy Processes

Investigation of Gas-Liquid Slug Formation in a Microchannel T-Junction
10:00 AM, Paper 170a

Miniaturization Aspects of Thermodynamic Cycle Processes for Mobile Energy Generation
10:20 AM, Paper 170b

Enhanced Gas Turbine Process with Microstructured Devices
10:45 AM, Paper 170c

Experimental and Analytical Study of the Motion of a Liquid Slug and Ferrofluid in a Microchannel
11:10 AM, Paper 170d

(171) Wednesday, Apr 9, 8:30 AM
PROCESS INNOVATIONS FOR ALTERNATIVE ENERGY
New Orleans Convention Center, Room 390

Sponsored by: Process Research and Innovation

Introductory Remarks
8:30 AM

Performance of An Intensified Downdraft Gasifier at 50kWe and 1 Mwe Scales
8:35 AM, Paper 171a

Microchannel Process Technology Unlocking Offshore GTL Opportunities
9:00 AM, Paper 171b

Experiences in Thermochemical Biomass Conversion
9:25 AM, Paper 171c

Effects of Pressure Above and Below the Pure Water Critical Pressure on Coke Compositions in Jet-A Reformation to Hydrogen
9:50 AM, Paper 171d



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Distributed Reforming of Bio-Oil for Hydrogen Production
10:15 AM, Paper 171e

Base-Catalyzed Transesterification of Canola Oil in the Presence of Electric Fields
10:40 AM, Paper 171f

Hydrogen Production by Autothermal Reforming of Propane Over Ce Promoted Perovskite Catalysts
11:05 AM, Paper 171g

(172) Wednesday, Apr 9, 8:30 AM
REACTION ENGINEERING: ANALYSIS, DESIGN AND MODELING
New Orleans Convention Center, Room 349

Sponsored by: Catalysis and Reaction Engineering Division

Simulation of Heterogeneously Cs-Doped Heteropolyacid Catalyzed Transesterification for Biodiesel Production
8:30 AM, Paper 172a

In-Situ, Fiber-Optic Measurement Techniques in Carbon Dioxide Expanded Liquid (CXL) Multiphase Reactors
8:50 AM, Paper 172b

Flow Distribution in a High Pressure Trickle Bed Reactor
9:10 AM, Paper 172c

Design Implications of the Nonlinear Dynamics of the Monolithic Loop Reactor for Fischer-Tropsch Synthesis
9:30 AM, Paper 172d

Performance Comparison of a Bubble Reactor and a Loop Reactor for Preparing a C5 Hydrofluoroether, HFE-449mec-f, in the Gas-Liquid Biphasic Reaction
9:50 AM, Paper 172e

Kinetic Model of Complex Reaction Network: Methanol Steam Reforming
10:10 AM, Paper 172f

Mathematical Modeling of Catalyst Deactivation by the Presence of Coke Formation in Catalyst Particles
10:30 AM, Paper 172g

Process Intensification for Methyl Oleate Epoxidation by Means of Reaction Calorimetry
10:50 AM, Paper 172h

(173) Wednesday, Apr 9, 8:30 AM
RECENT ADVANCES IN ALCOHOLS PRODUCTION AND THEIR ENERGY USAGE INCLUDING FUEL CELLS I
New Orleans Convention Center, Room 288

Sponsored by: Topical B: Energy Processes

Bioethanol Production by Fermentation of Starch Particles Using a Novel, Inexpensive Media
8:30 AM, Paper 173a

Simulation of Simultaneous Saccharification and Fermentation of Ethanol Production from Cellulose by An Operable Model
8:55 AM, Paper 173b

Synthesis of Liquid Fuel from Woody Biomass by A Bench-Scale BTL Plant
9:20 AM, Paper 173c

Effect of the Anion of Ionic Liquid for Dissolution of Cellulose
9:45 AM, Paper 173d

Study of Energy Efficiency in the DMFC Stack
10:10 AM, Paper 173e

Effective Dispersion of Noble Metal Nanocatalysts for DMFC by a Modified Electrostatic Spray Deposition
10:35 AM, Paper 173f

Application of Ferric Sulfate as Catalyst for Conversion of Free Fatty Content of Acid Oil to Biodiesel
11:00 AM, Paper 173g

(174) Wednesday, Apr 9, 8:30 AM
THERMODYNAMICS AND PHASE EQUILIBRIA I
New Orleans Convention Center, Room 351

Sponsored by: Thermodynamics and Transport Properties

Aqueous Partial Molar Volumes from Simulation and Individual Group Contributions
8:30 AM, Paper 174a

Hydrophobic Mismatch Can Induce Specific and Selective Membrane Protein Interactions
8:49 AM, Paper 174b

Multiscale Simulations of Polymer Permeation
9:08 AM, Paper 174c

Implicit Water Model of Ionic Surfactant Micelles
9:27 AM, Paper 174d

Molecular Thermodynamics of Branched Block Copolymer Micelles
9:46 AM, Paper 174e

A Performance Comparison of Equations of State
10:05 AM, Paper 174f

Cavity Thermodynamics in Organic Solvents
10:24 AM, Paper 174

Prediction and Modeling of Solubility Phenomena in Subcritical Fluids Using an Extended Solubility Parameter Approach
10:42 AM, Paper 174h

(175) Wednesday, Apr 9, 8:30 AM
[ENVR] ADVANCES IN ABIOTIC TRANSFORMATION PROCESSES FOR MICROPOLLUTANTS IN DRINKING WATER AND FOR SOURCEWATER PROTECTION II
New Orleans Convention Center, Room 237

Sponsored by: ACS Led Co-Sponsored Sessions Co-Sponsored by: Environmental Division

(176) Wednesday, Apr 9, 8:30 AM
[ENVR] ADVANCES IN DRINKING WATER DISINFECTION AND DISINFECTION BYPRODUCT MANAGEMENT III
New Orleans Convention Center, Room 236

Sponsored by: ACS Led Co-Sponsored Sessions Co-Sponsored by: Environmental Division

(177) Wednesday, Apr 9, 8:30 AM
[ENVR] SENSORS FOR DETECTION AND QUANTIFICATION OF CONTAMINANTS IN DRINKING WATER AND THE ENVIRONMENT I
New Orleans Convention Center, Room 235

Sponsored by: ACS Led Co-Sponsored Sessions Co-Sponsored by: Environmental Division

(178) Wednesday, Apr 9, 8:50 AM
[FUEL] HYBRID NANOTECHNOLOGIES FOR AN ENHANCED CO₂ FIXATION - BIOLOGICAL CONVERSION OF CO₂ INTO USABLE CHEMICALS
New Orleans Convention Center, Rooms 240-241

Sponsored by: ACS Led Co-Sponsored Sessions Co-Sponsored by: Fuels and Petrochemicals Division

(179) Wednesday, Apr 9, 9:00 AM
[FUEL] CLEAN ENERGY, FUELS AND CHEMICALS FROM BIOMASS - BIOMASS PRETREATMENT AND BIOLOGICAL PROCESSES
New Orleans Convention Center, Room 242

Sponsored by: ACS Led Co-Sponsored Sessions Co-Sponsored by: Fuels and Petrochemicals Division

(180) Wednesday, Apr 9, 10:15 AM
PROCESS SAFETY AS APPLIED TO CAPITAL PROJECTS
New Orleans Convention Center, Rooms 353-355

Sponsored by: Topical 4: Center for Chemical Process Safety (CCPS) 23rd International Conference

Controlling Risk During Major Projects
10:15 AM, Paper 180a

Case Study of a Facility Siting Analysis Carried out for a FSRU (Floating Storage Recovery Unit)
10:45 AM, Paper 180b

Process Plant, Pre-Commissioning, Commissioning and Start-Up Digest
11:15 AM, Paper 180c

(181) Wednesday, Apr 9, 10:15 AM
ENERGY GENERATION AND FUEL PROCESSING
New Orleans Convention Center, Room 388

Sponsored by: Topical 5: IMRET-10: 10th International Conference on Microreaction Technology

Heat Recuperation Strategies for Microreactors: Thermal Management in Gas-Phase and Catalytic Propane/air Oxidation
10:15 AM, Paper 181a

Design Principles of Multifunctional Microdevices for Hydrogen Production Via Short Contact Time Steam Reforming
10:40 AM, Paper 181b

Experimental Study of Methanol Synthesis in a Microchannel Reactor-Heat Exchanger
11:05 AM, Paper 181c

Studies for a Catalytically Heated Hexadecane Steam Reformer
11:30 AM, Paper 181d

Alkane Activation at Ambient Temperature - Unusual Selectivities, C-C, C-H Bond Scission Vs C-C Bond Coupling
12:10 PM, Paper 181e

(182) Wednesday, Apr 9, 11:30 AM
EPEC/EPC
New Orleans Convention Center, Room 399

Sponsored by: Topical 2: The 20th Ethylene Producers' Conference

◆ For Division Codes indicated in ACS led Co-Sponsored sessions, please refer to "Key to ACS Division Codes" on Page T40

(183) Wednesday, Apr 9, 1:00 PM
[PETR] ENERGY SCIENCE AND ENGINEERING: METHODS, OUTCOME AND FUTURE NEEDS I
New Orleans Convention Center, Room 209

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Fuels and Petrochemicals Division*

(184) Wednesday, Apr 9, 1:20 PM
[PHYS] MULTISCALE MODELING IN BIOPHYSICS - BIOMOLECULAR COMPLEXES: DYNAMICS, ASSEMBLY, AND FUNCTION II
New Orleans Convention Center, Room 346

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Thermodynamics and Transport Properties*

(185) Wednesday, Apr 9, 1:20 PM
[PHYS] NANOSTRUCTURED MATERIALS - NANOWIRE/NANOTUBE I
New Orleans Convention Center, Rooms 338-339

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Nanoscale Science and Engineering Forum*

(186) Wednesday, Apr 9, 1:25 PM
[ANYL] DIRECTED ASSEMBLIES USING SURFACE TEMPLATES II
New Orleans Convention Center, Room 335

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Materials Engineering and Sciences Division*

(187) Wednesday, Apr 9, 1:30 PM
[ENVR] ADVANCES IN ABIOTIC TRANSFORMATION PROCESSES FOR MICROPOLLUTANTS IN DRINKING WATER AND FOR SOURCEWATER PROTECTION III
New Orleans Convention Center, Room 237

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division*

(188) Wednesday, Apr 9, 1:30 PM
[FUEL] CLEAN ENERGY, FUELS AND CHEMICALS FROM BIOMASS - BIOMASS GASIFICATION
New Orleans Convention Center, Room 242

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Fuels and Petrochemicals Division*

(189) Wednesday, Apr 9, 1:30 PM
[FUEL] HYBRID NANOTECHNOLOGIES FOR AN ENHANCED CO₂ FIXATION - BIOTECHNOLOGICAL CONVERSION OF CO₂
New Orleans Convention Center, Rooms 240-241

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Fuels and Petrochemicals Division*

(190) Wednesday, Apr 9, 1:30 PM
[ENVR] UNDERSTANDING THE WATER FOOTPRINT OF ENERGY PRODUCTION FROM CONVENTIONAL AND ALTERNATIVE SOURCES I
New Orleans Convention Center, Room 236

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division*

(191) Wednesday, Apr 9, 1:30 PM
[COMP] COMPUTATIONAL CATALYSIS - ELECTROCATALYSIS AND THE IMPACT OF ENVIRONMENT
New Orleans Convention Center, Room 337

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Computational Molecular Science and Engineering Forum*

(192) Wednesday, Apr 9, 1:30 PM
ETHYLENE PLANT PROCESS CONTROL TECHNOLOGY REVIEW
New Orleans Convention Center, Rooms 393-394

*Sponsored by: Topical 2: The 20th Ethylene Producers' Conference
Co-Sponsored by: Systems and Process Control*

Welcoming Remarks
1:30 PM

Model Predictive Control
1:35 PM, Paper 192a

Break
2:35 PM

Controller Performance Monitorin
2:55 PM, Paper 192b

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(193) Wednesday, Apr 9, 1:30 PM**GLOBAL CONGRESS - CASE HISTORIES AND LESSONS LEARNED**

New Orleans Convention Center, Hall E-2

*Sponsored by: Topical 1: 42nd Loss Prevention Symposium**Co-Sponsored by: Topical 3: 10th Process Plant Safety Symposium, AIChE Led Co-Sponsored Sessions, Loss Prevention & Process Safety*

Fire and Explosion in an Explosives Conditioning Bunker

1:30 PM, Paper 193a

A Series of Small Changes

2:00 PM, Paper 193b

Combustible Dust Explosion Case History

2:30 PM, Paper 193c

Break

3:00 PM

Case Study: The Importance of Reliable Inertisation and Earthing of Ignition Sensitive Powder Handling Systems

3:30 PM, Paper 193d

HCl Tank Explosion

4:00 PM, Paper 193e

Synthron Runaway Reaction and Vapor Cloud Explosion

4:30 PM, Paper 193f

(194) Wednesday, Apr 9, 1:30 PM**MAINTENANCE AND RELIABILITY ROUNDTABLE DISCUSSION**

New Orleans Convention Center, Rooms 395-396

*Sponsored by: Topical 2: The 20th Ethylene Producers' Conference***(195) Wednesday, Apr 9, 1:30 PM****[ENVR] SENSORS FOR DETECTION AND QUANTIFICATION OF CONTAMINANTS IN DRINKING WATER AND THE ENVIRONMENT II**

New Orleans Convention Center, Room 235

*Sponsored by: ACS Led Co-Sponsored Sessions Co-Sponsored by: Environmental Division***(196) Wednesday, Apr 9, 1:30 PM****[FUEL] ULTRACLEAN TRANSPORTATION FUELS II**

New Orleans Convention Center, Room 239

*Sponsored by: ACS Led Co-Sponsored Sessions Co-Sponsored by: Fuels and Petrochemicals Division***(197) Wednesday, Apr 9, 2:00 PM****LIQUEFIED NATURAL GAS (LNG) - SAFETY II**

New Orleans Convention Center, Room 389

Sponsored by: AIChE Led Co-Sponsored Sessions, Natural Gas Utilization Co-Sponsored by: Fuels and Petrochemicals Division, Topical 6: 8th Topical Conference on Natural Gas Utilization

Acoustic Analysis of Explosive LNG Rapid Phase Transition on Water

2:00 PM, Paper 197a

LNG Computational Fluid Dynamics Consequence Modeling Comparison with the Brayton Fire School Tests

2:20 PM, Paper 197b

Energy Based Risk Methodology for Collision Protection of LNG Carriers

2:40 PM, Paper 197c

Modeling Underwater Penetration of LNG Carrier

3:00 PM, Paper 197d

The Development of Bayesian-LOPA Methodology for Risk Assessment of an LNG Importation Terminal

3:20 PM, Paper 197e

LNG Pool Fire Models: Similarities and Differences

3:40 PM, Paper 197f

(198) Wednesday, Apr 9, 2:00 PM**NOVEL PROCESS WINDOWS - UNUSUAL WAYS OF PROCESSING**

New Orleans Convention Center, Room 392

Sponsored by: Topical 5: IMRET-10: 10th International Conference on Microreaction Technology

Micro-Reaction Technology (MRT) for the Safe Industrial Application of Diazoalkane-Chemistry: New Chances for Process Intensification

2:00 PM, Paper 198a

Synthesis of 5-Hydroxymethylfurfural from Renewable Resources Using Microreaction Technology

2:25 PM, Paper 198b

Continuous Microreactor Processing, Reactive Ionic Liquids and Microwave Heating - Approaches towards Intensified Kolbe-Schmitt Synthesis

2:50 PM, Paper 198c

Effect of Surface-to-Volume Ratio in Microplasma Reactors

3:15 PM, Paper 198d

Advantages of on-Site Microreactors from Safety Viewpoint

3:40 PM, Paper 198e

Reaction Engineering Investigations of the Uncatalysed Cyclohexane Oxidation in a Microstructured Reactor

4:05 PM, Paper 198f

Novel Routes to Fluidized Bed Process Intensification Using a Centrifugal Field

4:30 PM, Paper 198g

(199) Wednesday, Apr 9, 2:00 PM**BIOLOGICAL AND CHEMICAL CONVERSION OF BIOMASS TO FUELS AND CHEMICALS**

New Orleans Convention Center, Room 289

Sponsored by: Topical B: Energy Processes

Toxic Response of Clostridium Beijerinckii and Escherichia Coli to Lignin Hydrolysate-Related Compounds

2:00 PM, Paper 199a

Control of Ethanol Dehydration in the Supercritical Water Reforming of Ethanol into Hydrogen

2:25 PM, Paper 199b

Weak Acid Prehydrolysis and Extraction of Hemicellulose Prior to Aspen Chemi Thermomechanical Pulping

2:50 PM, Paper 199c

Analysis of Transcriptional Response and Tolerance to Furfural in Industrial Yeast

3:15 PM, Paper 199d

Catalytic Liquefaction of High-Pure Cellulose on CeO_2 - Fe_2O_3 - ZrO_2 - La_2O_3

3:40 PM, Paper 199e

(200) Wednesday, Apr 9, 2:00 PM**DISTILLATION: PROCESSES AND MODELING II**

New Orleans Convention Center, Room 384

Sponsored by: Topical 8: Distillation Topical

Implementation and Validation of a Model-Centric Support System within a Pilot Plant Scale Packed Distillation Column

2:00 PM, Paper 200a

Feasibility Studies on Dehydration of Ethanol by Distillation Using Salt Effect (on VLE)

2:30 PM, Paper 200b

Singularities in Non-Equilibrium Reactive Flash Processes

3:00 PM, Paper 200c

Interdisciplinary Learning for Chemical Engineering Students from Organic Chemistry

3:30 PM, Paper 200d

(201) Wednesday, Apr 9, 2:00 PM**ENERGY AND ENVIRONMENT MANAGEMENT PROGRAMS II**

New Orleans Convention Center, Room 297

Sponsored by: Management Division

The Louisiana Petrochemical Megaproject

2:00 PM, Paper 201a

Smart Plants and Smart Management Prevent Plant Problems

2:30 PM, Paper 201b

Managing the Environment with Smart Plant Innovations

3:00 PM, Paper 201c

Cloud Computing in Manufacturing Environment

3:30 PM, Paper 201d

Panel Discussion

4:00 PM

(202) Wednesday, Apr 9, 2:00 PM**ENERGY II**

New Orleans Convention Center, Room 387

Sponsored by: Topical 7: 11th Topical on Refinery Processing

Flaring Minimization to Reduce Fuel Consumption - 2 Case Studies in Tabriz Petroleum Refinery and Khangiran Gas Refinery

2:00 PM, Paper 202a

Deliver the Challenges - Design and Operate Refining Plants More Efficiently to Minimize CO₂ Footprint

2:25 PM, Paper 202b

◆ For Division Codes indicated in ACS led Co-Sponsored sessions, please refer to "Key to ACS Division Codes" on Page T40

Optimising Heat Exchanger Design to Reduce Size, Cost and Energy Consumption for Plant Expansion and New Projects
2:50 PM, Paper 202c

Using Automation to Save Energy
3:15 PM, Paper 202d

Efficient Process Operations through Entropy Generation Optimization in Gas Fractionation Plants
3:40 PM, Paper 202e

Optimisation of Heat-Integrated Distillation Schemes Based on Shortcut Analysis, Pinch Analysis and Rigorous Simulation
4:05 PM, Paper 202f

(203) Wednesday, Apr 9, 2:00 PM

FOULING MITIGATION II

New Orleans Convention Center, Room 386

*Sponsored by: AIChE Led Co-Sponsored Sessions
Co-Sponsored by: Fuels and Petrochemicals Division*

Tutorial on Refinery Fouling Mitigation
2:00 PM, Paper 203a

Solvent Ranking for Asphaltenes Stability in Pipeline Transportation
2:35 PM, Paper 203b

Electrospray Ionization FT-ICR Mass Spectrometry of "ARN" Naphthenic Acids in Sodium and Calcium Naphthenate Deposits, and Crudes: Extraction and Quantification
3:10 PM, Paper 203c

Distillate Hydrotreater Fouling
3:45 PM, Paper 203d

Inhibition of Carbon Deposition from Jet Fuel by Surface Coatin
4:20 PM, Paper 203e

(204) Wednesday, Apr 9, 2:00 PM

HYDROGEN PRODUCTION II

New Orleans Convention Center, Room 350

*Sponsored by: AIChE Led Co-Sponsored Session,
Natural Gas Utilization*

*Co-Sponsored by: Fuels and Petrochemicals Division,
Topical 6: 8th Topical Conference on Natural Gas Utilization*

Development of Dense Membranes for Hydrogen Separation from Coal Gasification Streams
2:00 PM, Paper 204a

Developing New Wide Band Gap Semiconductors for Water Photolysis
2:25 PM, Paper 204b

Steam Reforming of Methane in a Novel Microreactor
2:50 PM, Paper 204c

Autothermal Reforming of Propane Over Alkali-Doping on the Hydrotalcite Catalysts
3:15 PM, Paper 204d

(205) Wednesday, Apr 9, 2:00 PM

NOVEL CATALYSTS: SYNTHESIS AND CHARACTERIZATION

New Orleans Convention Center, Room 349

Sponsored by: Catalysis and Reaction Engineering Division

Synthesis of Improved Fuel Cell Catalysts Using Electroless Deposition Methods
2:00 PM, Paper 205a

Growth of Fe Based Nanocatalysts on Reconstructed Au(111) Surfaces
2:20 PM, Paper 205b

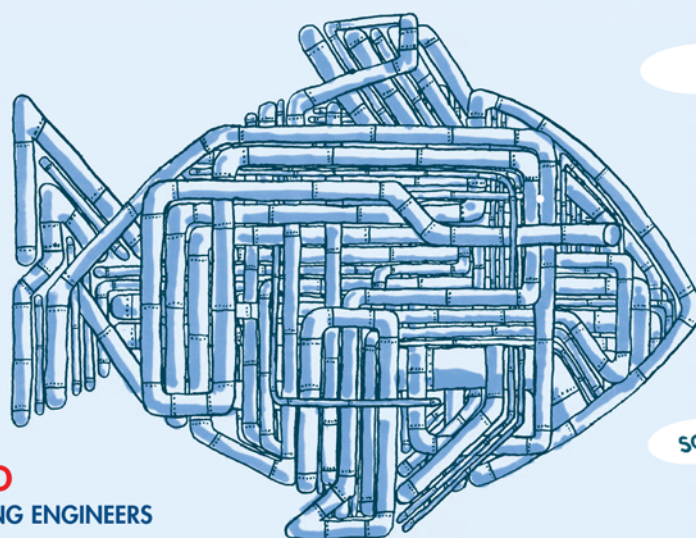
Synthesis and Characterization of Au-Pt/SiO₂ Catalysts Prepared by Electroless Deposition Methods
2:40 PM, Paper 205c

Comparison between Formic Acid Decomposition and CO Oxidation with Au Catalysts
3:00 PM, Paper 205d

Development of Nanoscale Ceria-Based Sulfur-Tolerant Catalyst Formulations
3:20 PM, Paper 205e

Selectivity of Zirconia Supported Catalysts
3:40 PM, Paper 205f

Highly Stable Pt-BHA Nanocomposite Catalysts for Low-Temperature CO Oxidation
4:00 PM, Paper 205g



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(206) Wednesday, Apr 9, 2:00 PM
PROCESS HEAT AND STEAM TRAPS
 New Orleans Convention Center, Room 390

Sponsored by: Manufacturing

Introductory Remarks
 2:00 PM

Overview of Steam Trap Types and Their Operation
 2:05 PM, Paper 206a

Process Improvements Via Steam Traps Design and Configuration
 2:30 PM, Paper 206b

Practically Managing Your Steam Traps Including the Common Pit Falls and Mistakes
 2:55 PM, Paper 206c

Strategies in Optimizing Condensate Return
 3:20 PM, Paper 206d

Steam Traps: The Hidden Gold in Chemical Plants
 3:45 PM, Paper 206e

(207) Wednesday, Apr 9, 2:00 PM
RECENT ADVANCES IN ALCOHOLS PRODUCTION AND THEIR ENERGY USAGE INCLUDING FUEL CELLS II
 New Orleans Convention Center, Room 288

Sponsored by: Topical B: Energy Processes

Electro-Oxidation of Ethanol Using Pt-Ru/C and Pt-Pd/C on Ballard Gas Diffusion Layers in PEM Fuel Cells
 2:00 PM, Paper 207a

Mathematical Formulation for the Design/Performance Analysis of a Lithium-Ion Insertion Cell
 2:20 PM, Paper 207b

Modeling High Rate Lithium-Ion Batteries Using Fundamental and Empirical Methods
 2:40 PM, Paper 207c

Preparation and Characterization of Pt-Ru-P/C Catalysts
 3:00 PM, Paper 207d

Preparation of Thin YSZ Electrolyte by Electrostatic Spray Deposition for Solid Oxide Fuel Cells
 3:20 PM, Paper 207e

Cellulose Triacetate : A New Material for Polymer Gel Electrolyte
 3:40 PM, Paper 207f

Functionalized Ionic Liquids and Zwitterionic Compounds as Electrolyte Additives for Lithium Batteries
 4:00 PM, Paper 207g

(208) Wednesday, Apr 9, 2:00 PM
REFINERY OPERATIONS TROUBLESHOOTING AND PLANT PROBLEM SOLVING
 New Orleans Convention Center, Room 385

Sponsored by: Topical 7: 11th Topical on Refinery Processing

Innovative Approach to Solve CCR Regenerator Pinning Problem
 2:00 PM, Paper 208a

Detailed Process Knowledge about Refinery Process Operations Using Radioisotope Technologies
 2:25 PM, Paper 208b

Use Integrated Knowledge to Get the Most of Your DCS
 2:50 PM, Paper 208c

Refinery Furnace Fouling
 3:15 PM, Paper 208d

Impact of Hydrotreater's Ammonium Chloride Salt Deposition on Refinery Operations
 3:40 PM, Paper 208e

Opportunities to Minimize Flaring
 4:05 PM, Paper 208f

(209) Wednesday, Apr 9, 2:00 PM
SENSING AND PROCESS ANALYTICS
 New Orleans Convention Center, Room 391

Sponsored by: Topical 5: IMRET-10: 10th International Conference on Microreaction Technology

Welcoming Remarks
 2:00 PM

Flow Reactors for Chemical Synthesis: An Opportunity for Process Control
 2:05 PM, Paper 209a

In-Flow Reaction Monitoring by NMR on Nanoliter Samples in a μ -Fluidic Chip
 2:30 PM, Paper 209b

Integration of Microfluidic and Planar Waveguide for Spectroscopic Monitoring of Chemical Reactions
 2:50 PM, Paper 209c

Microanalytical Methods for the Characterization of Microunit Operations
 3:10 PM, Paper 209d

Break
 3:30 PM

Microreactors with Integrated Porous Silicon Layer for Reaction Studies by Matrix-Free Mass Spectrometry
 3:40 PM, Paper 209e

A Microfluidic Calorimeter for Reaction Enthalpy and Kinetics Measurements
 4:00 PM, Paper 209f

New Micro Viscosity Sensor for Measuring Molecular Weight of Molecules During Polymerization in a Micro Reaction Plant
 4:20 PM, Paper 209g

Thermal Mass Flow Sensors for Monitoring Esterification Reactions in Residence Time Micro Reactors
 4:40 PM, Paper 209h

(210) Wednesday, Apr 9, 2:00 PM
SUSTAINABLE FEEDSTOCKS
 New Orleans Convention Center, Room 290

Sponsored by: Topical 9: Sustainability: Lessons, Actions and Outlook

Current Trends and Future of Biofuels and Biomass-Derived Chemicals
 2:00 PM, Paper 210a

Microchannel Fischer-Tropsch for Waste-to-Liquids
 2:45 PM, Paper 210b

Identification of Optimal Poultry Litter Biorefinery Location in Alabama through Minimization of Feedstock Transportation Cost
 3:15 PM, Paper 210c

Alternative Fuels and Engineering for Sustainable Development
 3:45 PM, Paper 210d

(211) Wednesday, Apr 9, 2:00 PM
THERMODYNAMICS AND PHASE EQUILIBRIA II
 New Orleans Convention Center, Room 351

Sponsored by: Thermodynamics and Transport Properties

Thermodynamic Testing Methods in Energetic Material Evaluation
 2:00 PM, Paper 211a

Models for Infinite Dilution Activity Coefficients in Ternary Liquid Systems
 2:19 PM, Paper 211b

Modeling the Dynamic Viscosity of Ionic Liquids
 2:38 PM, Paper 211c

Predicting Phase Equilibrium Near the Critical Point Using the Soave-Redlich-Kwong Equation of State
 2:57 PM, Paper 211d

A Relative Volatility Scale for Ionic Liquids
 3:16 PM, Paper 211e

Estimation of the Isothermal Compressibility and the Thermal Expansion Coefficient Using Density Explicit Empirical Equations
 3:35 PM, Paper 211f

Correlation of Liquid Thermophysical Properties Via Virial-Based Mixing Rules
 3:54 PM, Paper 211g

A New Method for Calculating Gas Minimum Miscibility Pressure
 4:12 PM, Paper 211h

(212) Wednesday, Apr 9, 2:00 PM
[IEC] INCENTIVES AND BARRIERS TO THE ADOPTION OF SUSTAINABLE CHEMISTRY I
 New Orleans Convention Center, Room 231

Sponsored by: ACS Led Co-Sponsored Sessions Co-Sponsored by: Sustainable Engineering Forum

(213) Wednesday, Apr 9, 6:00 PM
[ENVR] ADVANCES IN ABIOTIC TRANSFORMATION PROCESSES FOR MICROPOLLUTANTS IN DRINKING WATER AND FOR SOURCEWATER PROTECTION - POSTER SESSION
 New Orleans Convention Center, Hall A

Sponsored by: ACS Led Co-Sponsored Sessions Co-Sponsored by: Environmental Division

(214) Wednesday, Apr 9, 6:00 PM
[ENVR] ADVANCES IN ADSORPTION PROCESSES FOR DRINKING WATER TREATMENT AND SOURCEWATER PROTECTION - POSTER SESSION
 New Orleans Convention Center, Hall A

Sponsored by: ACS Led Co-Sponsored Sessions Co-Sponsored by: Environmental Division

◆ For Division Codes indicated in ACS led Co-Sponsored sessions, please refer to "Key to ACS Division Codes" on Page T40

(215) Wednesday, Apr 9, 6:00 PM
[ENVR] ADVANCES IN DRINKING WATER DISINFECTION AND DISINFECTION BYPRODUCT MANAGEMENT - POSTER SESSION
New Orleans Convention Center, Hall A

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division*

(216) Wednesday, Apr 9, 6:00 PM
[ENVR] MEMBRANE TECHNOLOGY FOR WATER TREATMENT AND REUSE - POSTER SESSION
New Orleans Convention Center, Hall A

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division*

(217) Wednesday, Apr 9, 6:00 PM
[ENVR] SENSORS FOR DETECTION AND QUANTIFICATION OF CONTAMINANTS IN DRINKING WATER AND THE ENVIRONMENT - POSTER SESSION
New Orleans Convention Center, Hall A

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division*

(218) Wednesday, Apr 9, 6:00 PM
[IEC] INCENTIVES AND BARRIERS TO THE ADOPTION OF SUSTAINABLE CHEMISTRY - POSTER SESSION
New Orleans Convention Center, Room 232

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Sustainable Engineering Forum*

(219) Thursday, Apr 10, 8:00 AM
ADVANCES IN CATALYTIC ROUTES TO OLEFINS — PAPER SESSION
New Orleans Convention Center, Rooms 395-396

Sponsored by: Topical 2: The 20th Ethylene Producers' Conference

Welcoming Remarks
8:00 AM

20 Year Reflections
8:05 AM

The Changing Dynamics of Olefin Supply and Demand
8:20 AM, Paper 219a

Maximizing Propylene through Catalytic Cracking: Indmax Fluid Catalytic Cracking (I-FCC) Process
8:45 AM, Paper 219b

Catalytic Routes to Olefins
9:10 AM, Paper 219c

Break
9:35 AM

Catalytic FCC Type Processes
9:55 AM, Paper 219d

FCC Propylene Production – Technology Integrations
10:20 AM, Paper 219e

Catalytic Routes to Olefins Shaping the Integrated Complex Configuration
10:45 AM, Paper 219f

Concluding Remarks
11:00 AM

(220) Thursday, Apr 10, 8:00 AM
CHEMISTRY AND IMPACTS OF CONTAMINANTS IN ETHYLENE PLANTS — PAPER SESSION
New Orleans Convention Center, Rooms 393-394

Sponsored by: Topical 2: The 20th Ethylene Producers' Conference

Welcoming Remarks
8:00 AM

20 Year Reflections
8:05 AM

Top 5 Contaminants in Ethylene Production Unit Feedstocks
8:15 AM, Paper 220a

Ethylene Plant Contaminants: A Database and Interactive Tool
8:45 AM, Paper 220b

Break
9:15 AM

Formation of Gum and Deposits in an Oxygenated Naphtha Stream
9:45 AM, Paper 220c



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Myths and Mysteries in the Manufacture of Ethylene
10:15 AM, Paper 220d

Concluding Remarks
10:45 AM

(221) Thursday, Apr 10, 8:00 AM
[COMP] COMPUTATIONAL EVALUATION OF RATE CONSTANTS II

New Orleans Convention Center, Room 337

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Computational Molecular Science
and Engineering Forum*

(222) Thursday, Apr 10, 8:20 AM
**[PHYS] NANOSTRUCTURED MATERIALS -
NANOWIRE/NANOTUBE II**

New Orleans Convention Center, Rooms 338-339

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Nanoscale Science and Engineering
Forum*

(223) Thursday, Apr 10, 8:20 AM
**[PHYS] MULTISCALE MODELING IN BIOPHYSICS -
PROTEIN FOLDING AND MISFOLDING: COARSE-GRAINING
AND MULTISCALE APPROACHES**

New Orleans Convention Center, Rooms 340-341

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Thermodynamics and Transport
Properties*

(224) Thursday, Apr 10, 8:30 AM
**ANALYSES OF TRANSPORT PHENOMENA IN ENERGY AND
ENVIRONMENTAL SYSTEMS**

New Orleans Convention Center, Room 297

Sponsored by: Topical B: Energy Processes

Contaminant Dispersal in Obstructed Flow
8:30 AM, Paper 224a

Yield Behavior of Wax Gel Formation in the Presence
of Asphaltenes
8:50 AM, Paper 224b

Coupled Combustion and Thermal Stress
Computation
9:10 AM, Paper 224c

Fluid Behaviors of Kaolin Slurry
9:30 AM, Paper 224d

Mass Transfer with Coaxially Placed Entry Region
Coil - Disc Assembly as Turbulence Promoter in
Vertical Tube Flow Reactor
9:50 AM, Paper 224e

On Modeling Stability of Magnesium Oxide
Sorel Cement Thermal Barrier Coatings
10:10 AM, Paper 224f

On the Violation of Laws of Thermodynamics by Laws
of Heat Conduction
10:30 AM, Paper 224g

On the Derivation of Damped Wave Conduction and
Relaxation Equation by Five Methods
10:50 AM, Paper 224h

(225) Thursday, Apr 10, 8:30 AM
CASE STUDIES IN DESIGN FOR SUSTAINABILITY
New Orleans Convention Center, Room 290

*Sponsored by: Topical 9: Sustainability: Lessons,
Actions and Outlook*

Estimation of Synthetic Diesel Fuel Production from
California's Carbonaceous Waste Streams Using the
CE-CERT Process
8:30 AM, Paper 225a

Integration of Fermentation and Transesterification
Industrial Scale Processes in the Lower Mississippi
River Corridor
8:55 AM, Paper 225b

Development of An Economically Viable Process for
Dehydration of Biobased Glycerol
9:20 AM, Paper 225c

Modeling of Integrated Gasification Combined Cycle
(IGCC) Systems with Environmental Concerns
9:45 AM, Paper 225d

Life Cycle Inventory Analysis of Recycling Post-
Consumer Nylon Carpets
10:10 AM, Paper 225e

(226) Thursday, Apr 10, 8:30 AM
**COMPUTATIONAL MOLECULAR SCIENCE AND ENGINEERING
FORUM**

New Orleans Convention Center, Room 349

*Sponsored by: Computational Molecular Science and
Engineering Forum*

Binding Energetics of Sulfur Dioxide and Dimethyl
Ether Using Both Ab Initio and Molecular Simulation
Methods
8:30 AM, Paper 226a

Computational Design of Materials for Hydrogen
Storage
8:55 AM, Paper 226b

Free-Volume Holes in Poly(vinyl acetate) by
Molecular Simulation: Comparison with Hole Theory,
PALS Measurement and Free-Volume Theory
9:20 AM, Paper 226c

Adsorption of Methanol, Ethanol, and Acetaldehyde
on Small Rhodium Clusters
9:45 AM, Paper 226d

DFT Estimation of Surface Energy of Different
Surfaces Morphology in Heterogeneous Catalyst
10:10 AM, Paper 226e

Molecular Modeling of the Adsorption Behavior of
Normal Alkanes on Silica Surfaces
10:35 AM, Paper 226f

Monte Carlo Simulations for the Adsorption of
Precursors Inside Zeolite Pores during the Synthesis
of Metal Nanowires
11:00 AM, Paper 226g

Probing Orientations of Adsorbed Protein on a Solid
Surface with the Hybrid Genetic Algorithm and
Spatial Grid Method
11:25 AM, Paper 226h

Computer Simulation of Single Dendrimer
Nanocarrier Loaded with Drug Molecules
11:50 AM, Paper 226i

(227) Thursday, Apr 10, 8:30 AM
CORROSION CONTROL IN REFINERY OPERATIONS
New Orleans Convention Center, Room 386

*Sponsored by: Topical 7: 11th Topical on Refinery
Processing*

Guidelines for Using Overhead Simulation Models to
Assess Overhead Corrosion Potential
8:30 AM, Paper 227a

Corrosion Prevention, Protection & Control in CDU
Overhead System
9:10 AM, Paper 227b

Case Study: Salt Corrosion Controlled by
Discontinuing Water Wash
9:50 AM, Paper 227c

Caustic Injection Relocation Project
10:30 AM, Paper 227d

(228) Thursday, Apr 10, 8:30 AM
CO₂ AND SULFUR ISSUES IN REFINERIES
New Orleans Convention Center, Room 387

*Sponsored by: Topical 7: 11th Topical on Refinery
Processing*

Tutorial: Sulfur Management in Refineries
8:30 AM, Paper 228a

Simulation of Claus Sulfur Plants
9:30 AM, Paper 228b

Development of New Generation of Agile
Desulfurizers
9:55 AM, Paper 228c

A Novel FCC Regeneration Process for Reduced CO₂
Emission
10:20 AM, Paper 228d

Decarbonisation in Process Sites
10:45 AM, Paper 228e

In Situ Synthesis and Characterization of Bimetallic
Mesoporous Silica and Its Applications
11:10 AM, Paper 228f

Ca Based High Temperature CO₂ Absorbents for
Sorption Enhanced Reforming Process
11:35 AM, Paper 228g

(229) Tuesday, Apr 10, 2:00 PM
DISTILLATION: EQUIPMENT AND APPLICATIONS
New Orleans Convention Center, Room 384

Sponsored by: Topical 8: Distillation Topical

Factors Affecting Overall Tray Efficiency
2:00 PM, Paper 229a

Distillation Tower Operation Experience
2:25 PM, Paper 229b

Novel Test Results Demonstrate Exciting Advantages
for Raschig Super-Pak
2:50 PM, Paper 229c

Maximize Propylene Recovery from a FCC Gas Plant
3:15 PM, Paper 229d

◆ For Division Codes indicated in ACS led Co-Sponsored sessions, please refer to "Key to ACS Division Codes" on Page T40

Separation of o-Xylene from the Mixed Xylenes by Distillative Freezing
3:40 PM, Paper 229e

Hydrodynamic Performance of Cross-Flow Concentric-Ring Rotating Bed
4:05 PM, Paper 229f

Ammonia by Pressure Swing Adsorption – Part II
4:30 PM, Paper 229g

(230) Thursday, Apr 10, 8:30 AM
ENHANCED HEAT TRANSFER FOR ENERGY SAVING
New Orleans Convention Center, Room 289

Sponsored by: Topical B: Energy Processes

Experimental and Analytical Investigation of Heat Transfer Phenomena in the Chain Section of a Rotary Lime Kiln
8:30 AM, Paper 230a

Numerical and Experimental Study of Heat Transfer Enhancement in Compact Heat Exchanger with Offset Strip Fins
8:55 AM, Paper 230b

Enhanced Heat Transport in a Pulsating Heat Pipe Using a Self-Rewetting Working Fluid
9:20 AM, Paper 230c

Characteristics of Freezing Heat Transfer of PCMS in Elliptical Cylinders
9:45 AM, Paper 230d

Enhanced Heat Transfer in Vertical Thermosiphon Reboiler
10:10 AM, Paper 230e

Energy Storage by Modeling a Cooling System
10:35 AM, Paper 230f

(231) Thursday, Apr 10, 8:30 AM
GAS CONVERSION AND SEPARATION TECHNOLOGIES
New Orleans Convention Center, Room 350

*Sponsored by: AIChE Led Co-Sponsored Session, Natural Gas Utilization
Co-Sponsored by: Fuels and Petrochemicals Division,
Topical 6: 8th Topical Conference on Natural Gas Utilization*

Mechanistic Study of the Fischer-Tropsch Synthesis Using Transient Kinetics
8:30 AM, Paper 231a

Natural Gas Desulfurization for Fuel Cell Applications by Adsorption
8:55 AM, Paper 231b

Promoted ZnO Sorbents for Low Temperature H₂S Removal: Influence of Temperature, Support Surface Area, Pore Volume and Pore Size
9:20 AM, Paper 231c

Reduced Order Modeling of Rate-Based Distillation Columns
9:45 AM, Paper 231d

Investigation of Hydrodynamics, Heat and Mass Transfer Simultaneously in Liquid Film Flow on Inclined Plates Using CFD
10:10 AM, Paper 231e

(232) Thursday, Apr 10, 8:30 AM
INDUSTRIAL ENERGY EFFICIENCY AND ITS CONTRIBUTIONS TO GREENHOUSE GAS EMISSIONS REDUCTION
New Orleans Convention Center, Room 288

Sponsored by: Topical B: Energy Processes

Energy Saving in Crude Oil Pre-Heat Train for Predetermined Retrofit-Level Based Target
8:30 AM, Paper 232a

Standards for Automated Demand Response Communications
8:55 AM, Paper 232b

Energy Systems Management and Greenhouse Gas Reduction
9:20 AM, Paper 232c

User-Friendly Software for Pumping Systems Operations Optimization Using Repeated Simulation Approach
9:45 AM, Paper 232d

(233) Thursday, Apr 10, 8:30 AM
MODELING AND CONTROL IN PROCESS DEVELOPMENT AND OPTIMIZATION
New Orleans Convention Center, Room 390

*Sponsored by: Technology Transfer
Co-Sponsored by: Pilot Plants*

Welcoming Remarks
8:30 AM

Wireless Retrofits in Process Industries for Enhanced Plant Asset Management, Condition Monitoring and Maintenance
8:35 AM, Paper 233a

Virtual Simulation Environments Using Online Control Software
9:00 AM, Paper 233b

Using Experimental and Simulation Data to Design and Optimize Phenol Purification
9:25 AM, Paper 233c

Fundamental Liquid-Liquid Equilibrium Model for Asymmetric Component Systems
9:50 AM, Paper 233d

Fast and Precise Quantification of Polymer and Petrochemical Products and Processes Using Automated TD-NMR Technology
10:15 AM, Paper 233e

(234) Thursday, Apr 10, 9:00 AM
[FUEL] CLEAN ENERGY, FUELS AND CHEMICALS FROM BIOMASS – FUELS AND CHEMICALS FROM VEGETABLE OILS
New Orleans Convention Center, Room 242

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Fuels and Petrochemicals Division*

(235) Thursday, Apr 10, 9:00 AM
MULTIPHASE REACTIONS, DISPERSIONS AND FOAMS - PART 1
New Orleans Convention Center, Room 391

Sponsored by: Topical 5: IMRET-10: 10th International Conference on Microreaction Technology

Horizontal Taylor Flow Hydrodynamics, Pressure Drop and Overall Mass Transfer in a Capillary Reactor
9:00 AM, Paper 235a

Liquid-Liquid Two-Phase Flow Patterns and Mass Transfer Characteristics in Rectangular Glass Microreactors
9:25 AM, Paper 235b

Multiphase Packed-Bed Microreactors – Tracer Dispersion and Hydrodynamic Characterization
9:50 AM, Paper 235c

Efficient Gas-Liquid-Solid Reduction and Oxidation Systems by Micro-Packed Bed Reactor
10:15 AM, Paper 235d

A Transparent Micro-Structured Reactor for the Investigation of Gas-Liquid Reactions at Elevated Pressures and Temperatures
10:40 AM, Paper 235e

Reactor Design Optimization for Direct Synthesis of Hydrogen Peroxide
11:05 AM, Paper 235f

(236) Thursday, Apr 10, 9:00 AM
PARTICLES AND FUNCTIONAL MATERIALS - PART 1
New Orleans Convention Center, Room 392

Sponsored by: Topical 5: IMRET-10: 10th International Conference on Microreaction Technology

Capillary-Based Microfluidic Reactors for the Production of Size-Controlled Functional Polymer Particles
9:00 AM, Paper 236a

Synthesis of Shape-Controlled Polymer Microparticles Using Asymmetric Microfluidic Channels
9:25 AM, Paper 236b

Microfluidic Synthesis of Macroporous Copolymer Particles
9:50 AM, Paper 236c

Controllable Preparation of Monodispersed Calcium Alginate Microcapsules in a Novel Microfluidic System
10:15 AM, Paper 236d

Electrospray Emulsification of Wax
10:40 AM, Paper 236e

Microreactor Synthesis of Unimodal Molecularly Imprinted Polymer (MIP) Beads Used for Explosives Detection
11:05 AM, Paper 236f

(237) Thursday, Apr 10, 9:00 AM
[COLL] UNDERSTANDING AND CONTROLLING BACTERIAL ADHESION AT MOLECULAR TO MACRO-SCALES I
New Orleans Convention Center, Room 225

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Environmental Division*

(238) Thursday, Apr 10, 1:20 PM
[PHYS] NANOSTRUCTURED MATERIALS - NANOWIRE/NANOTUBE III
New Orleans Convention Center, Rooms 338-339

*Sponsored by: ACS Led Co-Sponsored Sessions
Co-Sponsored by: Nanoscale Science and Engineering Forum*



(239) Thursday, Apr 10, 1:20 PM
**[PHYS] MULTISCALE MODELING IN BIOPHYSICS -
 MULTISCALE MODELING OF BIOPOLYMERS**
 New Orleans Convention Center, Rooms 340-341

*Sponsored by: ACS Led Co-Sponsored Sessions
 Co-Sponsored by: Thermodynamics and Transport
 Properties*

(240) Thursday, Apr 10, 1:30 PM
PARTICLES AND FUNCTIONAL MATERIALS - PART 2
 New Orleans Convention Center, Room 392

*Sponsored by: Topical 5: IMRET-10: 10th International
 Conference on Microreaction Technology*

Characterization of Porous Silicon Layers on Ordered
 Pillar Arrays Located in Flow Channels of Microfluidic
 Devices
 1:30 PM, Paper 240a

Supported Gold Catalysts for CO Oxidation in
 Microchannel Reactors
 1:55 PM, Paper 240b

Preparation of Polymer Colloidal Particles Using
 Spinning Disk Reactor
 2:20 PM, Paper 240c

Controlled Deposition of Metallic Nanoparticles for
 Enhanced In Situ Raman Characterization
 2:45 PM, Paper 240d

Synthesis of Carbon Nanofibers as Support Layer for
 Metal Catalysts in a Microreactor for Three-Phase
 Reactions
 3:10 PM, Paper 240e

(241) Thursday, Apr 10, 1:30 PM
**MULTIPHASE REACTIONS, DISPERSIONS AND FOAMS -
 PART 2**
 New Orleans Convention Center, Room 391

*Sponsored by: Topical 5: IMRET-10: 10th International
 Conference on Microreaction Technology*

Microextractor for Liquid-Liquid Extraction and In situ
 Detection of Lead
 1:30 PM, Paper 241a

Three-Phase Mass Transfer in Pillared Micro
 Channels
 1:55 PM, Paper 241b

Development of a Novel Compact 3-Phase
 Hydrogenation Reactor
 2:20 PM, Paper 241c
 Porous Microreactors for Gas-Liquid Contacting
 2:45 PM, Paper 241d

Nanoparticle Precipitation by Drops Flow in a
 Microchannel Device and Its Simulation
 3:10 PM, Paper 241e

Development of Microstructured Reactors and a
 Following Continuous Work-Up System for
 Liquid/Liquid Reactions for Use in Polycondensation
 3:35 PM, Paper 241f

(242) Thursday, Apr 10, 2:00 PM
**[COLL] UNDERSTANDING AND CONTROLLING BACTERIAL
 ADHESION AT MOLECULAR TO MACRO-SCALES II**
 New Orleans Convention Center, Room 225

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This key refers to Division Codes indicated in the ACS led co-sponsored sessions.
 Please reference division codes alphabetically listed on the ACS website @ www.acs.org
 for corresponding sessions and session details.

ANYL	Division of Analytical Chemistry	FUEL	Division of Fuel Chemistry
BMGT	Division of Business Development & Management	IEC	Division of Industrial & Engineering Chemistry
CHAL	Division of Chemistry & the Law	PETR	Division of Petroleum Chemistry
CHAS	Division of Chemical Health & Safety	PHYS	Division of Physical Chemistry
CINF	Division of Chemical Information	POLY	Division of Polymer Chemistry
COLL	Division of Colloid & Surface Chemistry	PRES	Presidential Events
COMP	Division of Computers in Chemistry	SCHB	Division of Small Chemical Business
COMSCI	Committee on Science	WCC	Women Chemists Committee
ENVR	Division of Environmental Chemistry		