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IV INTERNATIONAL CONFERENCE ON

FOSSIL & RENEWABLE ENERGY



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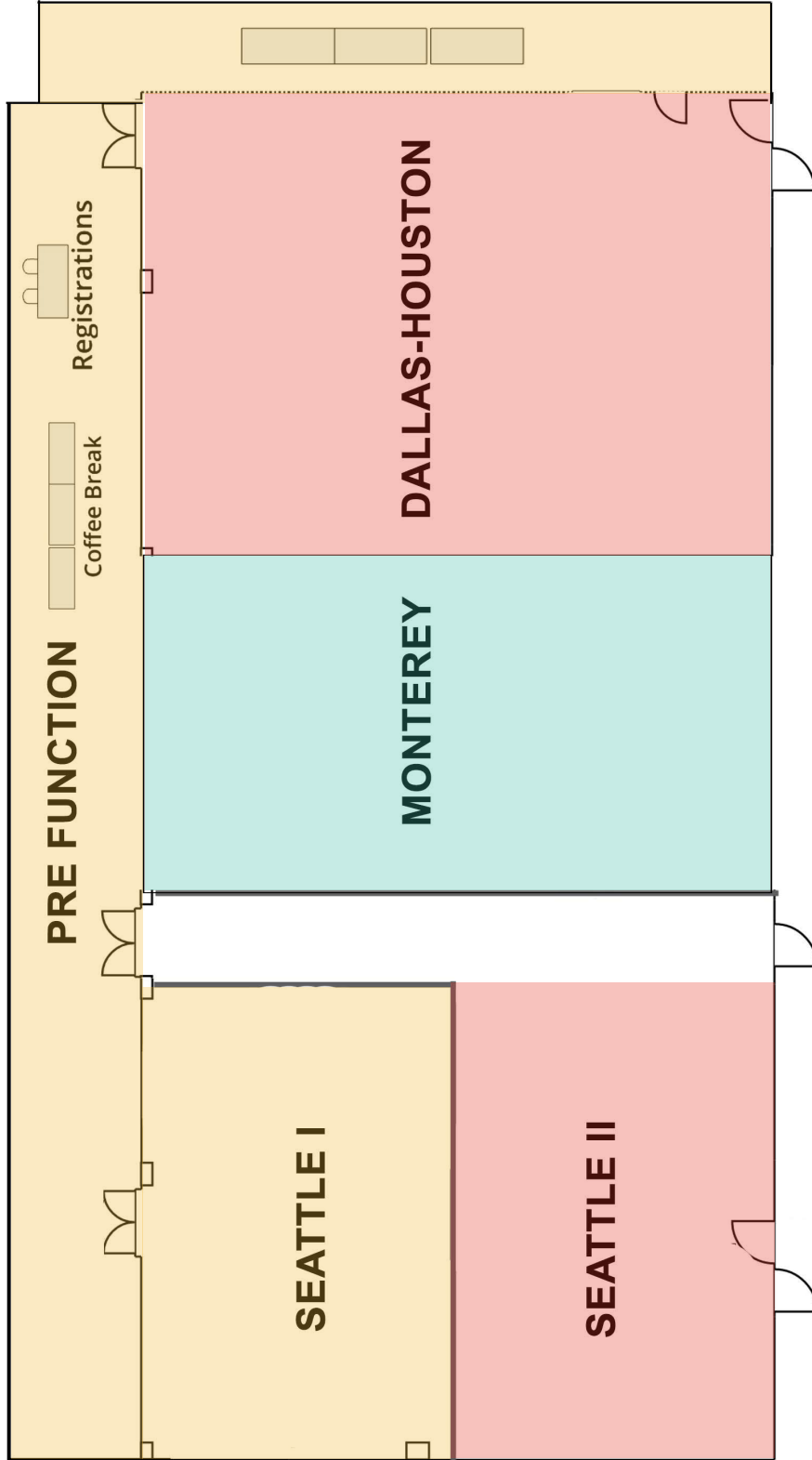
Venue

DoubleTree by Hilton
Houston Intercontinental Airport
15747 John F. Kennedy Blvd.
Houston, TX 77032 USA

F&R ENERGY 2020

February 17-19, 2020

Venue Floor



PROGRAM - DAY 1

February 17, 2020 MONDAY



07:30-07:50 Coffee, Registrations and Badge Pickup @ Prefunction Foyer
07:50-08:00 Opening, Welcome and Announcements @ Monterey

Plenary Session

@ Monterey

08:00-08:35 **Catalyst-Membrane System for Biomass Waste, CO₂ and Shale Gas Conversions for Hydrogen Production**
Sibudjing Kawi, National University of Singapore, Singapore

08:35-09:10 **Amphiphilic Janus Nanosheets for Oil Recovery**
Zhifeng Ren, University of Houston, Houston, TX

09:10-09:45 **Optimization, Modeling, and Data Sciences for Sustainable Energy Systems**
Panos M. Pardalos, University of Florida, Gainesville, FL

Keynote Session

@ Monterey

09:45-10:15 **Shale Gas Production under the Influence of Longwall Coal Production**
Daniel W. H. Su, National Institute for Occupational Safety and Health, Pittsburgh, PA

10:15-10:30 **Networking Break** @ Prefunction Foyer

10:30-11:00 **Hybrid Production of Natural Gas and Sunshine for Trigenation of Fuels Power and Commodities for a Promising New Industrial Revolution**
Nesrin Ozalp, Purdue University Northwest, Hammond, IN

11:00-11:30 **Energy Storage Systems for Mobility and Electrification**
Ilias Belharouak, Oak Ridge National Laboratory, Oak Ridge, TN

11:30-12:00 **Toward Reservoir-on-a-Chip: Understanding Water-Oil-Rock Interactions in Micromodel of Carbonate Reservoir via Real-Time Imaging**
Wei Wang, Aramco Services Company, Cambridge, MA

12:00-12:30 **Substitution of Fossil Fuels with Renewables for the Production of Electric Power – Difficulties and Resolutions**
Efstathios E. Michaelides, Texas Christian University, Fort Worth, TX

12:30-13:00 **Control of Wind Energy Systems**
Mario A. Rotea, The University of Texas at Dallas, Richardson, TX

13:00-13:35 **Networking Lunch** @ Dallas/Houston

13:35-14:05 **Managing the National Landscape During the Energy Transition**
Martin J. Pasqualetti, Arizona State University, Tempe, AZ

- Chairs:** *Kunio Yoshikawa, Tokyo Institute of Technology, Japan*
Xianghong Qian, University of Arkansas, Fayetteville, AR
- 14:05-14:25** **Brown Grease to Biodiesel: Completing the Puzzle**
Lawrence M. Pratt, The City University of New York, New York, NY
- 14:25-14:45** **Coal Alternative Fuel Production from Non-Segregated Municipal Solid Wastes Employing the Hydrothermal Treatment**
Kunio Yoshikawa, Tokyo Institute of Technology, Japan
- 14:45-15:05** **A Catalytic Membrane Reactor for the Production of Critical Platform Chemical Intermediates from Lignocellulosic Biomass**
Xianghong Qian, University of Arkansas, Fayetteville, AR
- 15:05-15:25** **Mechanism of Solvent Co-Injection with Steam from EOR, CEOR and CSOR Performance Points**
A. A. Hamouda, University of Stavanger, Norway
- 15:25-15:45** **Production of Ethylene Gas from Biomass by Thermal Decomposition Using Zeolite**
Tetsuto Nakashima, Osaka Toin High School, Japan
Kazuki Tsuoka, The University of Tokyo, Japan
- 15:45-16:05** **Use of Span 80 and Tween 80 for Blending Gasoline and Alcohol in Spark Ignition Engines**
Mohamed Gamal Amin Kassem, Alexandria University, Egypt
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- 16:05-16:20** **Networking Break** @ Prefunction Foyer
- 16:20-16:40** **A Novel Approach for Simultaneous Modeling of Process Configurations and Self-Optimizing Operating Targets for Biogas Plants**
Fabrice Abunde Neba, Norwegian University of Science and Technology, Norway
- 16:40-17:00** **Investigation of Pyrite Acidification in Bitumen Froth Treatment Tailings**
Yuming Xu, CanmetENERGY-Devon, Canada
- 17:00-17:20** **Modeling Landscape Sustainability in the Oil Producing Niger Delta Area of Nigeria**
Christian N. Madu, University of Nigeria, Nigeria
- 17:20-17:40** **Effect of Controlled Surface Modification via Electrophoretic Deposition of Carbon Nanotubes on Microbial Fuel Cell Anode Performance**
Sunand Santhanagopalan, University of Texas at Arlington, Arlington, TX
- 17:40-18:00** **Integrated Characterization of Desouqy Reservoir Rock in Faghur – Siwa Basin, Western-Desert, Egypt**
Khairy Abdel Dayem, Egyptian General Petroleum Corporation, Egypt
- 18:00-18:20** **Towards Organic Batteries Based on Poly-Anthraquinones Sulfides: Fundamental Aspect and Potential Applications**
Benjamin Flamme, Université de Tours, France
- 18:20-18:35** **Process Design of Boil-Off-Gas Re-Liquefaction Systems for LNG Carriers**
Chulmin Hwang, Seoul National University, South Korea
- 18:35-18:50** **The Effect of Tuning Parameters on the Selectivity Performance of Inorganic Ceramic Membranes for Biogas Upgrading**
Priscilla Ogunlode, Robert Gordon University, UK

PROGRAM - DAY 2

February 18, 2020 TUESDAY



Plenary Session

@ Monterey

- 08:00-08:35** **Solar Water Splitting or Storing Sunlight in a Bottle: The State of the Art and Prospects/Challenges**
Krishnan Rajeshwar, The University of Texas at Arlington, Arlington, TX
- 08:35-09:10** **Possible Game-Changers – Making Carbon Capture and Storage Commercially Viable**
Andrew R. Barron, ESRI, Swansea University, UK

Scientific Session- II

@ Monterey

Renewable Energy | Nano Energy | Energy Conversion & Storage

Chairs: *Masafumi Yamaguchi, Toyota Technological Institute, Japan*
Liming Dai, University of Regina, Canada

- 09:10-09:30** **Non-Tracking East-West XCPC Solar Thermal Collector for 200 Celsius Applications**
Lun Jiang, University of California, Merced, CA
- 09:30-09:50** **Low Cost c-Si/CdZnTe Tandem Solar Cell**
Peter Dingus, Westlake Village, CA

09:50-10:05 Networking Break

@ Prefunction Foyer

- 10:05-10:25** **Wind Farm Modelling: A Numerical Approach Coupling Macro- Scale and Micro-Scale Turbulence**
Stefano Leonardi, The University of Texas at Dallas, Richardson, TX
- 10:25-10:45** **Life Cycle Environmental Impact of Onshore and Offshore Wind Farms in Texas**
Raghava R. Kommalapati, Prairie View A&M University, Prairie View, TX
Hongbo Du, Prairie View A&M University, Prairie View, TX
- 10:45-11:05** **High Temperature Compatible Microencapsulated Molten Salt as Latent Heat Additives to Traditional Heat Transfer Fluid for Thermal Energy Storage**
Sunand Santhanagopalan, University of Texas at Arlington, Arlington, TX
- 11:05-11:25** **Modeling and Analysis of a Solar Flameless Combustion System**
Seyed Ehsan Hosseini, Arkansas Tech University, Russellville, AR
- 11:25-11:45** **The Process of Direct Spinning of Carbon Nanotube Fibres from Methane - turned on its Head**
Alan Windle, Cambridge University, UK
- 11:45-12:05** **Nonlinear Characteristics Diagnosis of Dynamic Systems Based on Periodicity Ratio and Lyapunov Exponent Methods**
Liming Dai, University of Regina, Canada
- 12:05-12:25** **Next Generation Solar Cells and PV-Powered Vehicle Applications**
Masafumi Yamaguchi, Toyota Technological Institute, Japan

- 12:25-12:50 Latent Heat Thermal Energy Storage Systems for Application with Air Source Heat Pumps for Domestic Space and Water Heating in the UK**
Philip Eames, Loughborough University, UK
- 12:50-13:05 Heat Transfer Enhancement and Nanofluids Flow in Micro-Channels Having Vortex Generators**
Mushtaq T. K. Al-Asadi, Basra Oil Company, Iraq
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- 13:05-13:35 Networking Lunch** @ Dallas/Houston
- Chairs: Tian-Bing Xu, Old Dominion University, Norfolk, VA
Yao Yu, North Dakota State University, Fargo, ND*
- 13:35-13:55 Wind Resources Assessment through Wind Data Modeling**
Arnab Sarkar, Indian Institute of Technology (BHU), India
- 13:55-14:15 Carbon Capture Using Polyethylenimine Functionalized Titanate Nanotubes Studied from Small to Large Scale**
Hongbo Du, Prairie View A&M University, Prairie View, TX
Raghava R. Kommalapati, Prairie View A&M University, Prairie View, TX
- 14:15-14:35 Review on Motion Energy Harvesting Developments**
Tian-Bing Xu, Old Dominion University, Norfolk, VA
- 14:35-14:55 Ground Source Heat Pump Systems Used in Cold-Climate Regions of the U.S.: an Opportunity or a Challenge?**
Yao Yu, North Dakota State University, Fargo, ND
- 14:55-15:15 Tertiary Battery for Energy Harvesting**
Yutaka Moritomo, University of Tsukuba, Japan
- 15:15-15:35 Electrification for Emission Reduction from Offshore Oil and Gas**
Kaushik Rajashekara, University of Houston, Houston, TX
- 15:35-15:55 How to Optimize Storage-Conditions by Using Multi-functional Battery Enclosures**
Jobst Kerspe, TEB Dr. Kerspe, Germany
- 15:55-16:15 Novel Nano Catalysts for CO Oxidation**
Aboubakr M. Abdullah, Qatar University, Qatar
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- 16:15-16:30 Networking Break** @ Prefunction Foyer
- 16:30-16:50 Perovskites Based Low Cost and Printable Photovoltaic Devices**
Syed Ghufraan Hashmi, Aalto University, Finland
- 16:50-17:10 The Role of Waste to Energy Plants in the Climate Change Mitigation Process**
Christoph Wunsch, TU- Dresden, Germany
- 17:10-17:30 Experimental Study of the Effects of the Urea-Water Spray Temperature and Injector Inclination on NOx Conversion in a Diesel Selective Catalytic Reduction System**
Daniel de la Rosa-Urbalejo, Universidad Autonoma de Nuevo Leon, Mexico
- 17:30-17:45 Design and Modeling of a Hotbox for Solid Oxide Fuel Cell Combined Heat and Power System**
Chien-Chang Wu, National Chiao Tung University, Taiwan

- *17:45-18:00 Mechanism of Expanding Swept Volume in Low-Permeability Reservoir for Nano-Sized Oil-Displacement Agent**
[Pei-Wen Xiao](#), Research Institute of Petroleum Exploration & Development, PetroChina, China
- *18:00-18:15 Nano-Flooding Technology Challenging Oil Displacement Limit**
[Pingmei Wang](#), Research Institute of Petroleum Exploration & Development, PetroChina, China
- *18:15-18:30 Theoretical Study on Light-responsive Systems and their Conformation Changes**
[Jing Ma](#), Nanjing University, China
- 18:30-18:50 Effect of Nanofluids and Complex Micro-Devices on Heat Transfer Enhancement**
[Jogender Singh](#), Tecnologico de Monterrey, Mexico

**Online Presentation (Live)*

- F&R P1** Effect of Controlled Oxygen Vacancy on H₂-Production through the Piezocatalysis and Piezophotonics of Ferroelectric R₃C ZnSnO₃ Nanowires
[Jyh Ming Wu](#), National Tsing Hua University, Taiwan
- F&R P2** Computational Modeling of Biofilm Formation and Corrosion Process on Steel Surfaces
[Mark David Waters Jr.](#), Texas A&M University, TX
- F&R P3** Viability of Ag Incorporated into UiO-66 for Carbon Capture
[Tin Le](#), Mississippi State University, Starkville, MS
- F&R P4** Modeling Resilient Infrastructure with Critical Points in Multimodal Network Models
[Jacob Arnold](#), Clemson University, Clemson, SC
- F&R P5** AVO Analysis, Inversion and Spectral Decomposition to Unlock the Hydrocarbon Potentiality of Khoman Fans Play - AG Basin - Western Desert Egypt
[Hamdy Ahmed Mahmoud](#), Badr Petroleum Company, Egypt
- F&R P6** Oxygen-Doped Ta₃N₅ for Z-scheme CO₂ Reduction with a Binuclear Ru(II) Complex Workable under a Wide Range of Visible Light
[Kanemichi Muraoka](#), Tokyo Institute of Technology, Japan
- F&R P7** Investigated on Iron-Based Material from Second Metallurgy for High Purity Hydrogen Production
[Iwei Wang](#), North Carolina State University, Raleigh, NC
- F&R P8** Applications of Colloidal Quantum Dots in Lighting and Photovoltaics
[Hsueh-Shih Chen](#), National Tsing Hua University, Taiwan
- * **F&R P9E** Characterization of Column Chromatography Separated Bio-oil obtained from Hydrothermal Liquefaction of Spirulina
[Shengyan Kong](#), Renmin University of China, China
- * **F&R P10E** Effects of Mesoporous Titania-Supported Nickel Oxide Catalysts on Hydrothermal Liquefaction of Microalgae
[Zhaosen Yin](#), Renmin University of China, China
- * **F&R P11E** Emulsion Stability and Interfacial Issues During the Gathering and Transportation of the Produced Fluid Recovered by CO₂ Flooding
[Guangyu Sun](#), China University of Petroleum, China

*Electronic Version

PROGRAM - DAY 3

February 19, 2020 WEDNESDAY



Scientific Session-III

@ Monterey

Fossil Energy | Energy Materials | Energy Efficiency

Chairs: *Zhengwen Zeng, University of Texas Permian Basin, Odessa, TX*
Carlos Nieto-Draghi, IFP Energies Nouvelles, France

- 08:00-08:20** **A New Method for Assessing Hydraulic Fracturing Treatment Quality**
Zhengwen Zeng, University of Texas Permian Basin, Odessa, TX
- 08:20-08:40** **Suppressing the Instabilities in Deep Offshore Oil Production**
Shu-Xia Tang, Texas Tech University, Lubbock, TX
- 08:40-09:00** **Towards High-Fidelity Simulation of Complex Local Ocean Flows in Energy Production Problems**
Hansong Tang, City College of New York, New York, NY
- 09:00-09:20** **A proposal of Hybrid Energy Transmission Pipelines for Liquid Natural Gas (LNG) and Electricity by Superconducting Power Cable**
Satarou Yamaguchi, Chubu University, Japan
- 09:20-09:40** **Improving Basement Construction Practices Using BIM**
Abdul-Aziz Banawi, North Dakota State University, Fargo, ND
- 09:40-10:00** **Prediction of Diffusion Coefficient of Hydrogen in NaCl Brines by Molecular Simulation for Geological Applications**
Carlos Nieto-Draghi, IFP Energies Nouvelles, France
- 10:00-10:20** **New Concepts in Gas Burner Design for Reduced Emissions**
Alper Ata, Alarko-Carrier Corporation, Turkey

10:20-10:30 **Networking Break**

@ Prefunction Foyer

- *10:30-10:45** **A New Class of Low Surface Energy Anionic Surfactant for Enhanced Oil Recovery (EOR)**
Shirin Alexander, Swansea University Bay Campus, UK
- 10:45-11:05** **Maximum Microalgae Derived Hydrogen Production in Large Scale Photobioreactors**
Jose Viriato Coelho Vargas, Federal University of Parana, Brazil
- 11:05-11:25** **Predicting the Viability of Unconventional Reservoirs a Perspective of Gas Production with Carbon Dioxide Storage in the Irati Formation of the Parana Basin, Brazil & Reducing the Doubts in the Use of Wireline Logs (Reservoir Evaluation without Core Data)**
Richardson M Abraham-A, University of Sao Paulo, Brazil
- 11:25-11:45** **The Concept of Cold Oil Pumping in Main Pipeline System**
Rinat Karimov, Ufa State Petroleum Technological University, Russia
- 11:45-12:05** **The Use of Granulated Blast Furnace Slag for Combustion Gas Products and Atmospheric Air Purification from Pollutant Components**
Vladimir Ezhov, South-West State University, Russia

- 12:05-12:25** **Effective Mechanical Properties of Stator Cores**
Iurii Petrenia, Power Machines, Russia
- 12:25-12:45** **Experimental Assessment of Mineral Scale Deposition Kinetics at Representative Oilfield Operation Conditions**
Ping Zhang, University of Macau, Macau
- 12:45-13:00** **On-Sun Testing of Miscibility Gap Alloy Thermal Storage**
Mark Copus, The University of Newcastle, Australia
- 13:00-13:15** **Improved Understanding on Proppant Behavior During Unconventional Oil/Gas Recovery**
K M Adheesha Bandara, Monash University, Australia
- 13:15-13:30** **Semi-Analytical Conductivity Modelling for Binary Proppant Mixture**
Vuong Van Pham, West Virginia University, Morgantown, WV
- 13:30-13:45** **A Study of Combustion Behavior in Premixed Lean-Burn Gas Engine**
Takahide Aoyagi, Kyushu University, Japan
- 13:45-** **Lunch & Departures**

**Online Presentation (Live)*

Notes: _____

We wish to meet you again
at
F&R Energy-2021



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