



5th International Conference on

F&R Energy -2021

Fossil and Renewable Energy

March 01-03, 2021 | Houston, TX

Plenary Speakers

Panos M. Pardalos, University of Florida, Gainesville, FL, USA



Paul and Heidi Brown Preeminent Professor in Industrial & Systems Engineering at the University of Florida

Andrew R. Barron, Energy Safety Research Institute (ESRI), UK



Charles and Mary Ferkel Professor of Chemistry and Applied Physics, and Director, Materials and Process Simulation Center at the California Institute of Technology

Krishnan Rajeshwar, The University of Texas at Arlington, Arlington, TX, USA



Distinguished University Professor at the University of Texas at Arlington

Nesrin Ozalp, Purdue University Northwest, Hammond, IN, USA



Professor and Chair of Mechanical and Civil Engineering Department, Purdue University Northwest, Hammond, IN

Sibudjing Kawi, National University of Singapore, Singapore



Currently with the Department of Chemical and Biomolecular Engineering, National University of Singapore

Howard Hornfeld, Fusion Advocates, Switzerland



Founder and President - **Fusion Advocates**

Keynote Speakers

Richard Spontak, North Carolina State University, Raleigh, NC, USA



Novel Material Strategies to Ultrasensitive Membranes for CO₂ Capture

Angelo Lucia, University of Rhode Island, Kingston, RI, USA



Modeling Asphaltenes as Glassy Materials

Elham Fini, Arizona State University, Tempe, AZ, USA



Using the Synergy between Lipid-rich and Protein rich Biomass to Enhance Economic Viability of Biofuel Production

Daniel W. H. Su, NIOSH, Pittsburgh, PA, USA



Title to be Announced

Oomman K. Varghese, University of Houston, Houston, TX



Title to be Announced

Ripudaman Malhotra, Independent Energy Consultancy, San Francisco, CA



Title to be Announced

Andrew Blakers, The Australian National University, Australia



100% renewable energy

Sayyad Zahid Qamar, Sultan Qaboos University, Oman



Mechanics of Swelling: A Diffusion Based Approach
Elastomer Research at Sultan Qaboos University

Featured Presentations

Nanomaterials for Nanofluid Enhanced Oil Recovery: Challenges and Perspectives

Wei Wang, Aramco Americas, Cambridge, MA, USA

Integrating Photovoltaics to Thermal Engineering Lab

Igor Tyukhov, San Jose State University, San Jose, CA, USA

Navigating the Politics of Fracking

Mark Truax, Pac/West Communications, Denver, CO, USA

Impact of Fluid-Rock Interactions on Mechanical Integrity of Host Rocks During CO₂ Geological Storage

Ange-Therese Akono, Northwestern University, Evanston, IL, USA

A decentralized energy management platform for high smart building penetrated distribution systems

Meisam Ansari, Southern Illinois University of Carbondale, Carbondale, IL, USA

Impact of Renewable Energy Transition on Eastern Mediterranean Gas Markets

Ceyhun Mahmudlu, Cornell University, Ithaca, NY, USA

Smart bio-inspired wind turbine blade for high efficiency wind energy utilization

Xiong (Bill) Yu, Case Western Reserve University, Cleveland, OH, USA

Energy and the unfolding boundary constraints of mechanical design theory

John Schramski, University of Georgia, Athens, GA, USA

Life cycle assessment of a solar still for community scale desalination

Sai Kiran Hota, University of California Merced, Merced, CA, USA

Fossil Fuel Production Is Reaching Limits in a Strange Way

Gail E. Tverberg, Our Finite World, Kennesaw, GA, USA

Two-dimensional Materials for Electrochemical Applications

Fei Yao, University at Buffalo, Buffalo, New York, USA

Tunable Hydrogen Production Using Gate-Modulated Two-Dimensional Transition Metal Dichalcogenide

Chaoran Chang, University at Buffalo, Buffalo, New York, USA

Novel Hydrogen Evolution Reaction Electrocatalyst Design Using Low-Dimensional Material

Sichen Wei, University at Buffalo, Buffalo, New York, USA

Sustainable alternatives to Plastics

Muhammad Rabnawaz, Michigan State University, East Lansing, MI, USA

3D Seismic, a KEY Tool for design & derisking of dual geothermal boreholes in stratified aquifers and in

Bertrand SIX, CGG-Houston, TX, USA

Pathways to Low-Cost, Low-Carbon Hydrogen Production

Scott Koonce, BayoTech On-Site Hydrogen, Houston, TX, USA

<p>Thermodynamics and phase relationship of carbonaceous mesophase appearing during coal tar pitch carbonization</p> <p>Mahnaz Soltani Hosseini, Polytechnique Montreal, Canada</p>
<p>Investigation of phase reaction between $\text{Pr}_2\text{NiO}_{4+\delta}$ and $\text{Ce}_{0.9}\text{Gd}_{0.1}\text{O}_{2-\delta}$ under solid oxide cell sintering and operating temperatures</p> <p>Chen-Yu Tsai, Imperial College London UK</p>
<p>Legal Issues for Implementing Carbon Capture Utilisation and Storage (CCUS) Technologies in the Asian Pacific Region</p> <p>IOM Law, Norway</p>
<p>USE OF CONCENTRATING SOLAR POWER ON STEAM GENERATION IN OIL THERMAL RECOVERY</p> <p>Lucas Bernhard Maisel, Federal University of Rio Grande do Norte, Brazil</p>
<p>Renewable space cooling under hot-humid climate: Performance study of a building-integrated earth-air heat exchanger system applying shallow groundwater energy</p> <p>Jiun-Wei Hu, National Taiwan University, Taiwan</p>
<p>Review and Analysis of Historical Leakages from Storage Salt Caverns</p> <p>Arnaud Reveillere, Geostock, France</p>
<p>Fresh breeze into the lull - A Vignette Study on drivers and barriers of local acceptance of wind turbines in Germany</p> <p>Hawal Shamon, Forschungszentrum Julich, Germany</p>
<p>Harmonic oscillator tank: A new method for leakage and energy reduction in a water distribution network with pressure driven demand</p> <p>Latchoomun Lekhrasingh, University of Mascareignes, Mauritius</p>
<p>Optimized wind and wave energy resource assessment and offshore exploitability in the Mediterranean Sea</p> <p>Francesco Ferrari, University of Genova, Italy</p>
<p>Modelling household solar adoption in Australia</p> <p>Glen Thomas Currie, University of Melbourne, Australia</p>
<p>Microseismic assessment and fault characterization at the Sulcis (South-Western Sardinia) field laboratoy</p> <p>Mario Anselmi, Istituto Nazionale di Geofisica e Vulcanologia, Italy</p>
<p>Fuel-Oil-to-Gas conversion in industrial-size boilers driven by Computational Fluid Dynamics</p> <p>Antonio Gomez Samper, Nablodot, S.L., Spain</p>
<p>Reforming-Controlled Compression Ignition - a Novel Concept for Internal Combustion Engines</p> <p>Amnon Eyal, Technion – Israel Institute of Technology, Israel</p>
<p>General algebraic modeling system for Photovoltaic parameter estimation: a comparative study with metaheuristic algorithms</p> <p>Gnetchejo Patrick Juvet, University of Douala, Cameroon</p>
<p>Simultaneous copper migration and removal from soil and water using a three-chamber microbial fuel cell</p> <p>Zhang Jingran, Southeast University, China</p>
<p>The relationship between energy production and simultaneous nitrification and denitrification via bioelectric de</p> <p>Huang Shan, Southeast University, China</p>
<p>Slow Pyrolysis as a Method for Bitumen and Used Plastics Disposal and Valorization</p> <p>Marco Maniscalco, University of Palermo, Italy</p>
<p>Effect of Multifunctional Nanocatalysts on n-C7 Asphaltene Adsorption and Subsequent Oxidation under High Pressure Conditions</p> <p>Oscar E. Medina, National University of Colombia, Colombia</p>

Surface-Complex Mediated Photocatalytic Selective Oxidation of 5-Hydroxymethylfurfural to 2,5-Diformylfuran Under Visible Light Ayesha Khan, Polish Academy of Sciences, Poland
Title to be Announced Pooja Sharma, University of Delhi, India
Renewable Energy Technology Implementation in Rural India: a Study with Special Emphasis to North East Plaban Bora, Assam Science and Technology University, India
Water Fusion Fuel Technology Development for Clean Energy Production in Thermonuclear Internal Combustion System Kingsley Abhulimen, University Technology System Limited, Nigeria
Characterization of Biodiesel (FAEE) Produced from Waste Plant and Animal-Fry Vegetable Oil in Plantain- Abayomi Gbenga Taiwo, Olabisi Onabanjo University, Nigeria
Characterization of the Non-Oil Jatropha Biomass Material for Use as a Source of Solid Fuel Elias Kethobile, University of Botswana, Botswana
Advanced and Innovative Nuclear Reactors: Analysis of The Socioeconomic Impact and its Potentialities Joao Claudio Batista Fiel, Instituto Militar de Engenharia, Brazil
Bridging the Sierra Leone Energy Efficiency Gap (EEG) and its Future Impact on Sustainable Development Jeremiah Thoronka, African Leadership University, Rwanda
Thermo-Gel Treatment Assisting Steam and Flue Gas Stimulation for Offshore Heavy Oilfield Jintao Wu, Tianjin Branch of CNOOC Ltd, China
Trace the Exploration Potential of Future Oil and Gas using the Behaviors of Molecular Fossils and Trace Elements Huajian Wang, China National Petroleum Corporation, China
Dye-Sensitized Graphene Quantum Dots as Active Catalyst for Solar Hydrogen Production Diptiman Dinda, Seoul National University, South Korea
Optimization of Iron Enhanced Anaerobic Digestion Of Agro-Wastes For Biomethane Production And Phosphate Release Christopher Enweremadu, University of South Africa, South Africa
New Simplified Mechanism and Verification of Numerical Simulation of CH ₄ Combustion in O ₂ /CO ₂ Atmosphere Ying Chen, Beijing University of Technology, China
New Functional Materials Applied as Photocathode for Clean Energy Production Maria Valnice Boldrin Zanoni, Sao Paulo State University, Brazil
Wind Power Energy to Reduce Peak Electricity Demand in Tamaulipas Mexico Quetzalcoatl Hernandez-Escobedo, National School of Higher Studies Juriquilla, Mexico
Velocity-Porosity-Mineralogy Model for Unconventional Shale and Its Applications to Digital Rock Physics Jack Dvorkin, King Fahd University of Petroleum and Minerals, Saudi Arabia