

13th

International Conference on Catalysis in Membrane Reactors



July 10-13th, 2017 | Houston

Monday, July 10 • 7:30AM - 8:45AM - Registration & Continental Breakfast—Foyer

Galleria III	
8:45AM	Morning Remarks - Benjamin A. Wilhite , <i>Texas A&M University</i> , Jianhua Tong , <i>Clemson University</i>
9:00AM	Plenary Lecture: Dr. Jürgen Caro , <i>University of Hannover</i> - Oxidations, Dehydrogenations and Esterifications in Catalytic Membrane Reactors Using Dense and Porous Membranes
10:00AM	Break—Foyer
Bio/Enzyme Reactors Session Chair: Miguel Torres Rodriguez	
10:30AM	Keynote, Jose Sanchez-Marcano , <i>European Institute of Membranes</i> - Enzyme-grafted Ceramic Membranes in Enzymatic Membrane Reactors: an Experimental and Modeling Approach
11:00AM	A Polymeric Drugs Carriers as Membrane Bioreactors - Anna Trusek-Holownia , <i>Wroclaw University of Science and Technology</i>
11:20AM	Continuous Production of Bioethanol from Sugarcane Bagasse and Downstream Purification Using Membrane Integrated Bioreactor - Sudip Chakraborty , <i>University of Calabria</i>
11:40AM	Membrane and Particle Screening for Continuous Biocatalysis in without Pickering Emulsions using a Membrane Reactor - Anja Heyse , <i>Berlin University of Applied Science</i>
12:00PM	The Novel Strategy for Enhanced Enzymatic Hydrolysis in the Membrane Bioreactor Integrated Hybrid System - Sudip Chakraborty , <i>University of Calabria</i>
12:20PM	Lunch—Galleria IV
Galleria III	
San Felipe	
Modeling of Membrane Reactors Session Chair: Theodore Tsotsis	
Sustainable Energy Applications of Membrane Reactors Session Chair: Kevin Huang	
1:20PM	Keynote, Martin van Sint Annaland , <i>Eindhoven University of Technology</i> - Fluidized Bed Membrane Reactors – Hydrodynamics Study with Immersed Tubular Membranes
1:50PM	CFD Study of Heat and Mass Transfer in Ethanol Steam Reforming in a Catalytic Membrane Reactor - Rui Ma , <i>Worcester Polytechnic Institute</i>
2:10PM	A CFD Modelling Study of Hydrogen Production in Fluidized Bed Membrane Reactors - Martin van Sint Annaland , <i>Eindhoven University of Technology</i>
2:30PM	Break—Foyer
Galleria III	
San Felipe	
3:00PM	Modelling of a High-temperature Polymer Electrolyte Membrane Fuel Cell Integrated with a Packed Bed Membrane Reactor - Paulo Ribeirinha , <i>University of Porto</i>
3:20PM	Process Simulation of Membrane Reactor Systems for Propane Dehydrogenation - Yujun Liu , <i>The Dow Chemical Company</i>
3:40PM	Techno-economic Assessment C ₂ H ₄ Production Using OCM Integrated with Membranes and Membrane Reactors - Vincenzo Spallina , <i>Eindhoven University of Technology</i>
4:00PM	End of Day 1

13th

International Conference on Catalysis in Membrane Reactors



July 10-13th, 2017 | Houston

Tuesday, July 11 • 8:00AM - 8:45AM - Registration & Continental Breakfast—Foyer

Galleria III	
8:45AM	Morning Remarks - Benjamin A. Wilhite , <i>Texas A&M University</i> , Jianhua Tong , <i>Clemson University</i>
9:00AM	Plenary Lecture: Dr. Robert J. Kee , <i>Colorado School of Mines</i> - Opportunities for Ceramic Ion-transport Membranes in Process Intensified Catalytic Reactors
10:00AM	Break—Foyer
Environmental Applications of Membrane Reactors Session Chair: Weishen Yang	
10:30AM	Keynote, Haihui Wang , <i>South China University of Technology</i> - Application of Two-Dimensional Mxene Membrane in Separation
11:00AM	Development of a Novel Photocatalytic Membrane Reactor for Industrial Wastewater Treatment Application - Sudip Chakraborty , <i>University of Calabria</i>
11:20AM	A Catalase Catalytic Membrane Used for H ₂ O ₂ Decomposition - Anna Trusek-Holownia , <i>Wroclaw University of Science and Technology</i>
11:40AM	Two-Dimensional Mxene Membrane for Water Purification - Li Ding , <i>South China University of Technology</i>
12:00PM	Design of a Catalytic Ozone Membrane Reactor for Endocrine Disrupting Compounds Removal - Ying Li , <i>Hong Kong University of Science and Technology</i>
12:20PM	Lunch—Galleria IV
Galleria III	
MOF/MOR/Inorganic Membranes Session Chair: Shiguang Li	
1:20PM	Keynote, Weishen Yang , <i>Dalian Institute of Chemical Physics</i> - Catalytic Biomass Conversion in MOF-based Membrane Reactor
1:50PM	Development of Membrane Reactor System for High Temperature Water Gas Shift Reaction Antonios Arvanitis , <i>University of Cincinnati</i>
2:10PM	In Situ Growth of MOF Membranes Assisted by Electro-deposition - Sheng Zhou , <i>South China University of Technology</i>
2:30PM	Break—Foyer
Galleria III	
3:00PM	Confined PFSA-MOF Composite Membrane in Fuel Cells for Promoted Water Management and Performance - Ran Deng , <i>Hong Kong University of Science and Technology</i>
3:20PM	Segregated-Feed Membrane Reactor Design for Alkylpyridine N-Oxidation - Benjamin A. Wilhite , <i>Texas A&M University</i>
3:40PM	Extraction of Tritium from Water Using Catalysis of Membrane Reactor Containing Manganese Dioxide - Hideki Koyanaka , <i>Forward Science Laboratory Ltd.</i>
4:00PM - 6:00PM	Poster Session & Reception—Foyer

San Felipe

H₂-conducting Ceramic Membranes
Session Chair: Ian Metcalfe

Keynote, Ahmed F. Ghoniem, *Massachusetts Institute of Technology* - Methane Partial Oxidation/Dry Reforming Using Nickel Catalyzed La_{0.9}Ca_{0.1}FeO_{3-δ} Oxygen Transport Membranes

Oxidative Coupling of Methane in a Catalytic Membrane Reactor: Membrane Development and Reactor Design - **Aitor Cruellas Labella**, *Eindhoven University of Technology*

Stability and Catalytic Performance of Ceria-based Mixed Conducting Membranes for Selective Oxidation of Hydrocarbons - **Heqing Jiang**, *Qingdao Institute of Bioenergy and Bioprocess Technology*

San Felipe

Integration of Catalytic Ethanol Reforming and Hydrogen Separation Using Protonic-Ceramic Membranes - **Benjamin Kee**, *Colorado School of Mines*

Design and Operation of a Proof-of-concept Module with 25 BSCF Tubular Oxygen Transport Membranes - **Ragnar Kiebach**, *Technical University of Denmark*

13th

International Conference on Catalysis in Membrane Reactors



July 10-13th, 2017 | Houston

Wednesday, July 12 • 8:00AM - 8:45AM - Registration & Continental Breakfast—Foyer

Galleria III	
8:45AM	Morning Remarks - Benjamin A. Wilhite , <i>Texas A&M University</i> , Jianhua Tong , <i>Clemson University</i>
9:00AM	Plenary Lecture: Dr. Ian S. Metcalfe , <i>Newcastle University</i> - Model Studies for Investigating Mechanism in Ion-conducting Inorganic Membrane Reactors
10:00AM	Break—Foyer
H ₂ Generation Membrane Reactors Session Chair: Bob Kee	
10:30AM	Keynote, Theodore T. Tsotsis , <i>University of Southern California</i> - Membrane-based Reactive Separations for Process Intensification During Power Generation
11:00AM	Ultra-compact Micro Structured Membrane Reformer for On-site Generation of Pure Hydrogen Roland Dittmeyer , <i>Karlsruhe Institute of Technology</i>
11:20AM	CO _x Free Hydrogen Production Through the Water-gas Shift Reaction in a Hybrid Sorption-enhanced Membrane Reactor - Luis M. Madeira , <i>University of Porto</i>
11:40AM	A Microstructured Membrane Reactor Concept for Liquid Organic Hydrogen Carrier Dehydrogenation Martin Cholewa , <i>Karlsruhe Institute of Technology</i>
12:00PM	Catalytic Membrane Reactors for Water-splitting in Iodine–sulfur (IS) Process - Toshinori Tsuru , <i>Hiroshima University</i>
12:20PM	Lunch—Galleria IV
Galleria III	San Felipe
Oxygen-Conducting Membranes Session Chair: S. Elangovan	Pd Membranes, Fabrication and demonstration Session Chair: Angelo Basile
1:20PM	Keynote, Xuefeng Zhu , <i>Dalian Institute of Chemical Physics</i> - Oxygen-permeable Ceramic Membrane for Hydrogen Separation with Excellent Performance
	Keynote, David Alfredo Pacheco Tanaka , <i>Tecnalia Research & Innovation</i> - Preparation and Hydrogen Permeation Studies of Ultra-thin Palladium (≈1 micrometer) and Carbon Membranes from Mixtures Containing Low Concentration of Hydrogen (< 30%)
1:50PM	Integration of Ceramic Membranes in Compact Metallic Reactors - Katja Haas-Santo , <i>Karlsruhe Institute of Technology</i>
	Performance Evaluation of Pd-Ag Membrane Reactor During Glycerol Steam Reforming for Production of Hydrogen by Artificial Neural Networks - Angelo Basile , <i>Institute on Membrane Technology, National Research Council</i>
2:10PM	Thermodynamic Analysis of Oxygen Permeable Membrane Reactor for Hydrogen Production from Water - Xiao-Yu Wu , <i>Massachusetts Institute of Technology</i>
	Experimental Demonstration of a 2 kW Membrane Assisted Chemical Looping Reforming System for Hydrogen Production with CO ₂ Capture - José A. Medrano , <i>Eindhoven University of Technology</i>
2:30PM	Break—Foyer
Galleria III	San Felipe
3:00PM	Ceria Based Dual Phase Membrane for Intermediate Temperature Membrane Reactors Stefan Baumann , <i>Forschungszentrum Jülich GmbH</i>
	Stability of Ceramic Supported Pd/AG Membranes in a Fluidized Bed Membrane Reactor for Methane Steam Reforming - Niek de Nooijer , <i>Eindhoven University of Technology</i>
3:20PM	Enhanced CO ₂ Dissociation on Surface Catalyzed Oxygen Permeable Membranes - Xiao-Yu Wu , <i>Massachusetts Institute of Technology</i>
	Hydrogen Production by Methane Steam Reforming in a Pd Membrane Reformer - Shin-Kun Ryi , <i>Korea Institute of Energy Research</i>
3:40PM	Catalysis of Membrane Reactor with Pd/MnO ₂ for Improving Performance on SOFC Using Dimethylether Ken Takeuchi , <i>Tokyo University of Science</i>
	Preparation and Characterization of PD-Based Double Skinned Membranes for Hydrogen Production in Fluidized Bed Membrane Reactors - Alba Arratibel , <i>Eindhoven University of Technology</i>
6:00PM - 8:00PM	Conference Banquet (Ticketed Event) - Galleria IV

13th

International Conference on Catalysis in Membrane Reactors



July 10-13th, 2017 | Houston

Thursday, July 13 • 8:00AM - 8:45AM - Registration & Continental Breakfast—Foyer

Galleria III

8:45AM	Morning Remarks - Benjamin A. Wilhite , <i>Texas A&M University</i> , Jianhua Tong , <i>Clemson University</i>
9:00AM	Plenary Lecture: Dr. S. (Elango) Elangovan , <i>Ceramatec, Inc.</i> - Solid Oxide Technology: Materials and Operational Challenges
10:00AM	Break—Foyer
	Pd Membrane Reactors Session Chair: Roland Dittmeyer
10:30AM	Keynote, Angelo Basile , <i>Institute on Membrane Technology, National Research Council</i> - Pd-Membrane Reactors - A Short Overview
11:00AM	Estimation of Applicability of the Catalytic Membrane Reactor for Methanol Dehydrogenation Process Aleksey Vedyagin , <i>Boreskov Institute of Catalysis</i>
11:20AM	Chemical Looping Reforming with Integrated Membranes for Effective H ₂ Production with CO ₂ Capture - Vincenzo Spallina , <i>Eindhoven University of Technology</i>
11:40AM	Hydrogen Production with Integrated CO ₂ Capture in a Novel Membrane Assisted Chemical Switching Reforming (csr) Reactor - José A. Medrano , <i>Eindhoven University of Technology</i>
12:00PM	Fabrication and Performance Study of Palladium on Alumina Supported Membrane Reactor: Natural Gas Steam Reforming , A Case Study - Bryce Anzelmo , <i>Stanford University</i>
12:20PM	Lunch and Awards—Galleria IV
1:20PM	Conference Conclusion

Scientific Committee Members

H.J.M (Henny) Bouwmeester

University of Twente, The Netherlands

Rune Bredesen

SINTEF, Norway

Jurgen Caro

University of Hannover, Germany

Michael Carolan

Air Products, US

Junhang Dong

Univ. of Cincinnati, US

S. Elangovan

Ceramatec, US

Detlev Frisch

Fraunhofer IAP, Germany

Lidietta Giorno

ITM-CNR, Italy

Naotsugu Itoh

University of Utsunomiya, Japan

Freek Kapteijin

TU Delft, The Netherlands

Kang Li

Imperial College London, United Kingdom

Eduardo Lombardo

INCAPE, Argentina

Jose Sanchez-Marcano

IEM, France

Adelio Mendes

University of Porto, Portugal

Jose Sousa

Angelo Basile

ITM-CNR (Italy)

Roland Dittmeyer

KIT (Germany)

Shiguang Li

Gas Technology Institute (USA)

Jerry Lin

Arizona State University (USA)

Ian Metcalfe

University of Newcastle (UK)

Sylwia Mozia

West Pomeranian University of Technology (Poland)

Jianhua Tong

Clemson University (USA)

Theodore Tsotsis

University of Southern California (USA)

Benjamin Wilhite

Texas A&M University (USA)

University of Tras-os-Montes e Alto Douro, Portugal

Miguel Torres

Universidad Autónoma Metropolitana Azcapotzalco, Mexico

Vladimir Volkov

TIPS RAS, Russia

Weishen Yang

Dalian Institute of Chemical Physics

Andrew Yaroslavtsev

TIPS RAS, Russia

King Lun Yeung

Hong Kong University of Science and Technology

Haihui Wang

University of Adelaide, Australia

Enrico Drioli, Honorary Member

ITM-CNR (Italy)