

Advances in Polymer Electrolyte Membrane Fuel Cell Systems 2009

<http://www.polyacs.net/Workshops/09FuelCells/home.htm>



Asilomar Conference Grounds
Pacific Grove, California, USA
February 15 - 18, 2009



Co-organized by...

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SUNDAY, FEBRUARY 15

PLENARY LECTURE SESSION I

James E. McGrath, Discussion Leader

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| 3:00 p.m. | Opening Remarks, Jim McGrath and Tom Zawodzinski |
| 3:15 p.m. | Nancy Garland, U.S. Department of Energy DOE View of Advanced Materials for PEMFC |
| 4:00 p.m. | Deborah Jones, University of Montpellier, France Recent Progress in the Use of Novel Functionalities for Proton Conducting Membranes: The European Fuel Cells Program and the Joint Technology Initiative |
| 5:00 p.m. | WELCOMING RECEPTION |
| 6:00 p.m. | DINNER |

PLENARY LECTURE SESSION II

Steve Hamrock, 3M, Discussion Leader

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| 7:30 p.m. | Bryan Pivovar, NREL Alkaline Membrane Fuel Cells |
| 8:15 p.m. | Bob Moore, Virginia Tech The Crystalline Component in PEMFC Membranes |

MONDAY, FEBRUARY 16

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| 7:30 a.m. | BREAKFAST |
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PLENARY LECTURE SESSION III

Jay Sayre, Battelle, Discussion Leader

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| 9:00 a.m. | Klaus-Dieter Kreuer, Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany Poly-arylene-sulfones with High Ion Exchange Capacity: Ionomers with Unique Microstructural and Transport Features |
| 9:45 a.m. | Craig S. Gittleman, Membrane and Ionomer General Motor Corporation Fuel Cell Research Labs PEM Performance-Durability Trade-offs for Automotive Fuel Cell Systems". |
| 10:15 a.m. | BREAK |
| 10:30 a.m. | Hossein Ghassemi & Tom Zawodzinski, Case Western Reserve University Developing New Fluorinated Membranes for High Temperature PEM Fuel Cells |
| 11:00 a.m. | Steve Hamrock, 3M Proton Exchange Membrane Development at 3M |
| 12:00 p.m. | LUNCH |

| PLENARY LECTURE SESSION IV Bhima Vijayendran, Battelle, Discussion Leader | |
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| 1:30 p.m. | Steven Holdcroft, Simon Fraser University NRC Model Systems for Probing the Role of Morphology on the Properties of Proton-Conducting Polymer Membranes |
| 2:00 p.m. | Yu Seung Kim and Bryan Pivovar, Los Alamos National Labs Fuel Cell Performance of Sulfonated Copolymers under Elevated Temperature/Low Humidity Conditions |
| 2:30 p.m. | Brian Benicewicz, University of South Carolina PBI Membranes, Fuel Cells and Hydrogen Pumps |
| 3:00 p.m. | BREAK |
| 3:15 p.m. | Michel Foure, Arkema Group Polyvinylidene Fluoride Based Membranes |
| 4:00 p.m. | Mike Hickner, Penn State University Cation and Anion Transport in Functionalized Polymers |
| 4:30 p.m. | John Muldoon, Toyota Motor Engineering & Manufacturing North America, Inc. (Invited) Novel Electrolytes for Fuel Cell Electrodes |
| 5:00 p.m. | POSTER SESSION I and Reception – Submit poster abstracts to Lesia Linkous, ACS Division of Polymer Chemistry by January 8, 2009 (lesiar@vt.edu) |
| 6:00 p.m. | DINNER |

| PLENARY LECTURE SESSION V YuSeung Kim, Los Alamos National Labs, Discussion Leader | |
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| 7:30 P.M. | Hervé Galiano, CEA, France Composite proton-exchange membranes: Grafting of sulfonated and phosphonated polymers from silica surfaces |
| 8:00 P.M. | Andy Herring, Colorado School of Mines Designing A New Ionomer From Scratch – Pushing Polypoms to the Limit |
| 8:30 P.M. | Dave Schiraldi, Case Western Reserve University Durability of Non-perfluorinated Membrane Materials for Fuel Cells |

TUESDAY, FEBRUARY 17

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| 7:30 a.m. | BREAKFAST |
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| PLENARY LECTURE SESSION VI Bryan Pivovar, NREL, Discussion Leader | |
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| 8:30 a.m. | Arumugam (Ram) Manthiram, UT Austin Novel Polymeric Blends Membranes Based on Acid-Base Interactions |

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| 9:15 a.m. | Ken Mauritz, University of Southern Mississippi Model Studies of the Characterization of the Durability of Nafion® Membranes and Nafion/Inorganic Oxide Nanocomposite Membranes |
| 10:00 a.m. | BREAK |
| 10:15 a.m. | Régis Mercier, CNRS, University of Savoie, France Recent Developments in Polyimide Copolymer Membranes |
| 11:00 a.m. | Tom Zawodzinski, Case Western Reserve University The Roles of Polymer Electrolytes in Composite Electrodes for Fuel Cells |
| 11:30 a.m. | Kev Adjemian, Nissan Motors Membrane Development for Automotive Fuel Cells |
| 12:00 p.m. | LUNCH |
| PLENARY LECTURE SESSION VII Tom Zawodzinski, CWRU, Discussion Leader | |
| 2:00 p.m. | Jacques Roziere, Montpellier University Modifications of Polybenzimidazole-type Polymers for PEMFC Application |
| 2:30 p.m. | Emil Roduner, Stuttgart University Spatially and Time Resolved Conductivity Measurements of Proton Conducting Membranes |
| 3:00 p.m. | BREAK |
| 3:15 p.m. | Don Baird, Virginia Tech Membrane Casting and Its Effects of Properties |
| 3:45 p.m. | Benny Freeman, University of Texas Hydrogen Purification Using Polymer and Polymer-Based Membranes |
| 4:15 p.m. | Bernd Bauer, Fumatech Medium Temperature Membrane Activities |
| 4:45 p.m. | Raju Vasanthakumari, Dept. of Polymer Technology, BSA Crescent Eng. College, India Synthesis and Characterization of Thermoplastic Polyurethane Based Composite Membranes |
| 5:15 p.m. | Shulamith Schlick, University of Detroit Mercy Visualizing Chemical Reactions and Crossover Processes in a Fuel Cell by Spin Trapping |
| 6:00 p.m. | DINNER |

WEDNESDAY, FEBRUARY 18

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| 7:30 a.m. | BREAKFAST |
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PLENARY LECTURE SESSION VIII
Bob Ward, DSM-Polymer Tech, Discussion Leader

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| 9:00 a.m. | Jochen Kerres, Stuttgart University New Acid-base Blend Membranes for Low and Intermediate Temperature Fuel Cells |
| 9:45 a.m. | John Elter, Plug Power Novel Electrodes |
| 10:30 a.m. | BREAK |
| 11:15 a.m. | James E. McGrath, Virginia Tech Polymer Electrolyte Membranes based on Hydrophobic-Hydrophilic Block Copolymers |
| 12:00 p.m. | Jim McGrath and Tom Zawodzinski Closing Remarks |
| 12:15 p.m. | LUNCH |

For additional workshop information, contact:
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Or visit the meeting's website:

<http://www.polyacs.net/Workshops/09FuelCells/home.htm>