

Asilomar 2007 Program

“Advances in Materials for Proton Exchange Membrane Fuel Cell Systems”

February 18-21, 2006

SUNDAY, FEBRUARY 18

PLENARY LECTURE SESSION I James E. McGrath, Discussion Leader	
2:00 p.m.	Opening Remarks, Jim McGrath and Tom Zawodzinski
2:15 p.m.	Nancy Garland, U.S. Department of Energy DOE View of Advanced Materials for PEMFC
3:00 p.m.	Seizo Miyata, New Energy and Industrial Technology Development Organization (NEDO), Japan Fuel Cell Projects in Japan and Their Highlights for PEMFCs
3:45 p.m.	Ken Reifsnider, University of Connecticut Foundations for Durability of Ionomer Membranes and Membrane Electrode Assemblies
5:00 p.m.	WELCOMING RECEPTION
6:00 p.m.	DINNER
PLENARY LECTURE SESSION II Steve Hamrock, 3M, Discussion Leader	
7:30 p.m.	Joseph DeSimone, UNC Chapel Hill Curable, 100% Solids Liquid Precursors to Patterned PEMs
8:15 p.m.	Deborah Jones, University of Montpellier, France Proton Exchange Membranes for High Temperature Fuel Cells
9:00 p.m.	James E. McGrath, Virginia Tech Aromatic Ionomer Proton Exchange Membrane Systems

MONDAY, FEBRUARY 19

PLENARY LECTURE SESSION III Jay Sayre, Battelle, Discussion Leader	
8:30 a.m.	Klaus-Dieter Kreuer, Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany Exploring the Limits of Sulfonic Acid Based Proton Conducting Membranes
9:15 a.m.	Silvia Licoccia, University of Rome Strategies to Increase the Operating Temperature of PEMFCs: From Nanocomposites to Hybrid Electrolytes
9:45 a.m.	David Wesolowski, Oak Ridge National Labs Stability, Solubility and Surface Chemistry of Inorganic Solid Phases Under PEMFC Operating Conditions
10:15 a.m.	BREAK
10:30 a.m.	Hossein Ghassemi & Tom Zawodzinski, Case Western Reserve University Challenges in Developing High Temperature Proton Exchange Membranes
11:00 a.m.	W.S. Winston Ho, Ohio State University Synthesis and Characterization of Sulfonated Polyimides and Copolymers as Proton Exchange Membranes for Fuel Cells
11:30 a.m.	Richard Pollard and Qunhui Guo, Plug Power Membrane-Material Interactions in Fuel Cell Systems
12:00 p.m.	LUNCH
PLENARY LECTURE SESSION IV Bhima Vijayendran, Battelle, Discussion Leader	
2:00 p.m.	Meilin Liu, Georgia Institute of Technology Heterocycles-Based Proton Exchange Membranes
2:30 p.m.	Yu Seung Kim and Bryan Pivovar, Los Alamos National Labs Performance and Durability of Sulfonated Poly(Arylene Ether) Membranes
3:00 p.m.	Michel Foure, Arkema Group Polyvinylidene Fluoride Based Membranes
3:30 p.m.	BREAK
3:45 p.m.	Régis Mercier, CNRS, France Ionic Membranes Based on Sulfonated Polybenzimidazoles
4:15 p.m.	Tom Zawodzinski, Case Western Reserve University Polymer Electrolytes In Electrodes
4:45 p.m.	Mike T. Hicks, Fuel Cell Components Program, 3M Center 3Ms MEA Lifetime Modeling.

6:00 p.m.	DINNER
7:30 p.m.	POSTER SESSION I – Submit poster abstracts to Lesia Linkous, ACS Division of Polymer Chemistry by January 8, 2007 (lesiar@vt.edu)

TUESDAY, FEBRUARY 20

PLENARY LECTURE SESSION V Bryan Pivovar, LANL, Discussion Leader	
8:30 a.m.	Giulio Alberti, University of Perugia, Italy Water-Uptake of Pure and Composite-Nafion Membranes and Relations with Temperature, Relative Humidity, Conformation Memory, Elastic Modulus and Instability Maps of Proton Conductivity
9:15 a.m.	Ken Wynne, Virginia Commonwealth University Thermal Stability in Air of Pt/C Catalysts and PEM Catalyst Layers
10:00 a.m.	BREAK
10:15 a.m.	Sung Chul Kim, KAIST, Korea Polymer Blend Membranes for the Direct Methanol Fuel Cell
10:45 a.m.	Kenneth Wagener, University of Florida A Study of Morphological Precision in Free Acid & Ionomer Polymers
11:15 a.m.	Brian Benicewicz, Rensselaer Polytechnic Institute Advances in PBI Membrane Materials
12:00 p.m.	LUNCH
PLENARY LECTURE SESSION VI Tom Zawodzinski, CWRU, Discussion Leader	
2:00 p.m.	Yossef A. (Joe) Elabd, Drexel University Methanol Crossover: New Insights and Experimental Techniques
2:30 p.m.	Rod Borup, Los Alamos National Labs PEM Fuel Cell Durability Issues for Transportation
3:00 p.m.	BREAK
3:15 p.m.	Don Baird, Virginia Tech Polymer Composite Bipolar Plates
3:45 p.m.	Thomas Willis, Precision Energy and Technology LLC Commercial Aspects of PEM Fuel Cells
4:15 p.m.	Robert Moore, University of Southern Mississippi Probing the Glass Transition and Chain Dynamics in Perfluorosulfonate Ionomer Membranes
6:00 p.m.	DINNER
7:30 p.m.	POSTER SESSION I – Submit poster abstracts to Lesia Linkous, ACS Division of

WEDNESDAY, FEBRUARY 21

PLENARY LECTURE SESSION VII Don Baird, Virginia Tech, Discussion Leader	
8:30 a.m.	Bernd Bauer, FuMA-Tech GmbH New Membrane Systems
9:15 a.m.	M. Pinéri, O. Diat, G. Gebel, CEA Grenoble, France Experimental μ X Ray Diffraction Evidence of Membrane Water Desorption and Crystallization Inside Active Layers During Below 0°C Cooling of MEA
9:45 a.m.	BREAK
10:00 a.m.	Jim Fenton, Florida Solar Energy Center, and Dept. of Mechanical, Materials and Aerospace Engineering, University of Central Florida Durability and Degradation of Nafion and Nafion Composite Membranes in Working PEM Fuel Cells
10:30 a.m.	Emil Roduner, Stuttgart University, Germany "Ex-situ and in-situ Studies of Fuel Cell Membrane Degradation Using ESR Spectroscopy"
11:00 a.m.	Andy Herring, Colorado School of Mines Fundamental Studies of Composite Inorganic/PFSA Membranes for Fuel Cell operation
11:30 a.m.	Ken Mauritz, University of Southern Mississippi Dielectric Spectroscopy as a Probe of Molecular Motions in, and Chemical Degradation of Nafion and Hydrocarbon Fuel Cell Membranes
12:00 p.m.	Jung-Ki Park, KAIST, Korea New MEA based on Hydrocarbon Membrane with High Interfacial Stability
12:30 p.m.	James E. McGrath and Tom Zawodzinski Closing Remarks

MEETING WEBSITE:

<http://www.polyacs.org/arcmeetings/fuelcells.07.shtml>