

**SUNDAY, FEBRUARY 8**

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1:30 p.m.     **REGISTRATION BEGINS IN CHAPEL HALL. FOR LATE ARRIVALS, PLEASE CHECK IN CHAPEL HALL FIRST AS STAFF WILL HAVE A DESK THERE AND IN DOLPHIN HALL**

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**PLENARY  
LECTURE SESSION**

*Tom Zawodzinski & Brian Benicewicz, Discussion Leaders*

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3:00 p.m.     **CHAPEL HALL MEETING SPACE OPENS**

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3:15 p.m.     *Opening Remarks, Brian Benicewicz and Tom Zawodzinski*

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3:30 p.m.     **Nancy Garland**, U.S. Department of Energy, **John Kopasz**, **Tom Benjamin**, ANL  
Advanced Polymers in the DOE Hydrogen and Fuel Cells Program     **1**

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4:15 p.m.     **Craig Gittleman**, GM  
Engineering a Proton Exchange Membrane for Automotive Fuel Cell Applications     **2**

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5:00 p.m.     **WELCOME RECEPTION**

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6:00 p.m.     **DINNER**

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**USING COMPUTATIONS TO UNDERSTAND MEMBRANE PROCESSES**  
**Mike Hickner, Discussion Leader**

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7:30 p.m.     **Stephen Paddison**, University of Tennessee  
Vanadium Cations in PFSA Ionomers: Ab initio and Classical Simulations     **3**

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8:15 p.m.     **Peter Berg**, Norwegian University of Science & Technology, NORWAY  
Capabilities and Limitations of PEM Pore Network Models     **4**

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**MONDAY, FEBRUARY 9**

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7:30 a.m.     **BREAKFAST**

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**POLYMERIC LITHIUM ION CONDUCTORS**  
**Tom Zawodzinski, Discussion Leader**

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8:30 a.m.     **Bruno Scrosati**, University of Rome, ITALY  
Historical Perspective of Battery Polymer Electrolytes     **5**

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9:10 a.m.     **George Crabtree**, Argonne National Lab  
The Joint Center for Energy Storage Research (JCESR): A New Paradigm for Energy Storage Research     **6**

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9:50 a.m.     **Alexei Sokolov**, University of Tennessee  
Developing Superionic Polymers for Battery and Fuel Cell Applications     **7**

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## MONDAY, FEBRUARY 9, CONT'D

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10:30 a.m.	<b>BREAK</b>	
10:45 a.m.	<b>Steve Greenbaum</b> , Hunter College NMR Studies of Structure and Transport in Lithium Battery Polymer Electrolytes	<b>8</b>
11:15 a.m.	<b>Moon Jeong Park</b> , POSTECH, KOREA Block Copolymer Electrolytes with Enhanced Cation Transference Number	<b>9</b>
11:45 a.m.	<b>Nitash Balsara</b> , University of California, Berkeley Nanostructured Block Copolymer Lithium Batteries	<b>10</b>
12:15 p.m.	<b>LUNCH, Posters can be displayed in Chapel Hall</b>	

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### ADVANCES IN ANION CONDUCTING MEMBRANES *Brian Benicewicz, Discussion Leader*

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1:30 p.m.	<b>Mike Hickner</b> , Penn State Crosslinked, Stable Ammonium-Based Anion Exchange Membranes	<b>11</b>
2:00 p.m.	<b>Andy Herring</b> , Colorado School of Mines Water and Anion Conduction in AEM's, Ideas on how to Use Water Efficiently for Practical Devices	<b>12</b>
2:30 p.m.	<b>Peter Pintauro</b> , Vanderbilt University Hydroxide Ion Conducting Fuel Cell Membranes Based on Polymer Nanofiber Electrospinning	<b>13</b>
3:00 p.m.	<b>BREAK</b>	
3:30 p.m.	<b>Yu Seung Kim</b> , LANL Perfluorinated Anion Exchange Membranes	<b>14</b>
4:10 p.m.	<b>Bryan Coughlin</b> , UMass Robust and Dynamic Polymer Membranes for Anion Transport	<b>15</b>
4:50 p.m.	<b>Xiaoming Ren</b> , Army Research Lab Characterization of Alkaline Anion Exchange Membranes for Fuel Cell Applications	<b>16</b>
5:20 p.m.	<b>END AFTERNOON SESSION</b>	
6:00 p.m.	<b>DINNER</b>	

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### MEMBRANES FOR REDOX FLOW BATTERY RESEARCH Steven Hamrock, Discussion Leader

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7:00 p.m.	<b>Vijay Ramani</b> , IIT Anion Exchange and Bipolar Membranes for Electrochemical Energy Conversion and Storage: Conduction and Degradation Phenomena	<b>17</b>
7:30 p.m.	<b>Tom Zawodzinski</b> , University of Tennessee Comparative Study of Different Membrane Types for Redox Flow Batteries	<b>18</b>
8:00 p.m.	<b>POSTER SESSION AND RECEPTION</b>	

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## TUESDAY, FEBRUARY 10

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7:30 a.m.      **BREAKFAST**

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### HIGH TEMPERATURE PROTON CONDUCTORS

*Peter Pintauro, Discussion Leader*

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8:30 a.m.      **Deborah Jones**, University Montpellier II, FRANCE  
Mitigation of Fuel Cell Membrane Degradation through Mechanical and Chemical  
Stabilization Routes **19**

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9:10 a.m.      **Qinfeng Li**, Technical University of Denmark  
High Temperature Composite Membranes for Fuel Cells **20**

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9:50 a.m.      **Klaus-Dieter Kreuer**, Max-Planck Institute for Solid State Research, GERMANY  
Phosphoric Acid-Base HT Fuel Cell Membranes: What Can We Learn from Model  
Systems **21**

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10:30 a.m.      **BREAK**

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### SYNTHESIS OF NEW MEMBRANES FOR < 125°C

*Deborah Jones, Discussion Leader*

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10:45 a.m.      **Lorenz Gubler**, Paul Scherrer Institute, SWITZERLAND  
Radiation Grafting: Tailored Ion-Conducting Membranes for Electrochemical  
Applications **22**

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11:15 a.m.      **Chulsung Bae**, Rensselaer Polytechnic Institute  
Novel Hydrocarbon Fuel Cell Membranes for Enhanced Proton Conductivity at Low  
Humidity Conditions **23**

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11:45 a.m.      **Regis Mercier**, University of Lyon, FRANCE  
Synthesis of Sulfonated Side Chain Containing Aromatic Copolymers **24**

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12:15 p.m.      **LUNCH**

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12:15 p.m. – 6:00 p.m.      **Afternoon Break**

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6:00 p.m.      **DINNER**

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### NEW CONCEPTS AND APPLICATIONS

*Klaus-Dieter Kreuer, Discussion Leader*

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7:00 p.m.      **Brian Benicewicz**, University of South Carolina  
New Developments in PBI Synthesis for Fuel Cells and Beyond **25**

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7:30 p.m.      **Jochen Kerres**, University of Stuttgart, GERMANY  
The Blend Concept: From Low-T Cation-Exchange to High-T Cation Exchange to  
Anion-Exchange Blend Membranes **26**

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8:00 p.m.      **Dirk Henkensmeier**, Fuel Cell Research Center, KIST, KOREA  
Membrane Modifications to Increase Performance and Lifetime **27**

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8:30 p.m.      **END EVENING SESSION**

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## WEDNESDAY, FEBRUARY 11

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7:30 a.m.     **BREAKFAST, Please remove poster displays**

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**STRUCTURE AND PROPERTIES**  
**Stephen Paddison, Discussion Leader**

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8:30 a.m.     **Bob Moore**, Virginia Tech  
Role of Sulfonation Heterogeneity on Membrane Properties     **28**

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9:10 a.m.     **Sandrine Lyonard**, CEA-Grenoble, FRANCE  
Structure-transport interplay probed by scattering techniques     **29**

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9:50 a.m.     **Vito Di Noto**, University of Padova, ITALY  
Structure and Relaxations in Ion Conducting Polymers for Energy Devices     **30**

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10:30 a.m.     **BREAK**

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10:45 a.m.     **Gillian Goward**, McMaster University, CANADA  
Evolution of Perfluoro-ionomer Structure and Dynamics: A Combined Solid-State  
NMR & Microscopy Study     **31**

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11:15 a.m.     **Lou Madsen**, Virginia Tech  
Diffusion Deconvolved: Quantifying Molecular and Morphological Contributions to  
Transport in Polymers     **32**

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11:45 a.m.     **Brian Benicewicz and Tom Zawodzinski**, Closing Remarks, Meeting Adjourns

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12:00 p.m.     **LUNCH**

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