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**(PBFC-2)**

**Meeting Abstracts 2005-03**

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# PBFC-2

## Meeting Abstracts PBFC-2 — Second International Conference on Polymer Batteries and Fuel Cells June 12-17, 2005 — Las Vegas, Nevada

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- 159 The Characterization of Lithium Polyelectrolyte Mixing with Ionic Liquid - E. Cha, D. MacFarlane, C. Lee, and S. Lim
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### Battery Systems

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- 166 Li<sub>2</sub>O-B<sub>2</sub>O<sub>3</sub>-P<sub>2</sub>O<sub>5</sub> Solid Electrolyte for Thin Film Batteries - D. Shin, C. Kangil, and C. Kihyun
- 167 Incorporating Ionic Liquids into Li-Ion Microbatteries - A. Stux, K. Swider-Lyons, W. Henderson, and P. Trulove



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- 170 Handling Ultra-Thin Film Polymer Substrates - I. Clelland and R. Price
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- 172 Effect of Inorganic Fillers on the Electrochemical Properties of Poly (vinylidene fluoride-hexafluoropropylene) Lithium Salt- Composite Electrolytes - S. Manuel, S. Venkatachalam, B. Wei, N. Renganathan, S. Gopukumar, and T. Premkumar

### **PBFC2-FC - Fuel Cells**

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- 174 Self-Assembled Organic/Inorganic Hybrids as Membrane Materials - K. Mauritz, R. Storey, and J. Kopchick
- 175 Proton Polymer Electrolytes - B. Yabari Mohammad and T. Safari
- 176 Applications of Nuclear Magnetic Resonance to Transport Studies of Fuel Cell Membranes and SEI Characterization in Li Ion Batteries - S. Greenbaum
- 177 Proton Conductive Poly(arylene ether) Ionomers for High Temperature PEFCs - K. Miyatake, Y. Chikashige, Y. Chikyu, and M. Watanabe
- 178 In-situ Observation of Distribution and Real Time Dynamics of Water in a Fuel Cell PEM Upon Working - V. Rossi-Albertini, B. Paci, F. Nobili, R. Marassi, M. Navarra, S. Panero, and M. Di Michiel
- 179 Sulfonated Diels-Alder Polyphenylenes: Physical Properties and Hydrogen Fuel Cell Performance - C. Cornelius, C. Fujimoto and M. Hickner
- 180 Advanced Materials for Proton Exchange Membranes - J. McGrath
- 181 Supramolecular Rigid-Rod Polymers as Ionically Conducting Membranes - H. Every, E. Mendes and S. Picken
- 182 Proton Conducting Plasma-Polymerized Membranes - N. Ponath, D. Gruber, and J. Mueller
- 183 The Use of Heteropoly Acids in Composite Membranes for Elevated Temperature or Low Humidity PEM Fuel Cell Operation - A. Herring, J. Turner, S. Dec, J. Malers, F. Meng, J. Horan, and N. Aieta
- 184 A Fundamental Approach Toward the Non-precious Metal Catalysts for Oxygen Reduction Reaction in PEM Fuel Cells - S. Campbell, D. Susac, P. Wong, L. Zhu, A. Sode, M. Teo, D. Bizzotto, K. Mitchell, and R. Parsons
- 185 PEM Electrocatalyst Durability Measurements - R. Borup, F. Garzon, D. Wood, D. John, and E. Brosha
- 186 Polymers for the Systematic Study of Proton Conducting Membranes - S. Holdcroft, K. Shi, and Y. Yang
- 187 Novel Design Methodology for Fuel Cell MEAs Using Nanoscale Modeling - T. Yamaguchi, Y. Nishiyama, A. Yamauchi, and H. Zhou
- 188 Polymer Electrolyte Development at NASA Glenn - M. Meador, W. Bennett, D. Tigelaar, and J. Kinder
- 189 Mechanical Property Measurements of PFSA Membranes at Elevated Temperatures and Humidities - M. Yandrasits
- 190 Internal Polymer Electrolyte Membrane Fuel Cell/Supercapacitor Hybrid Power Systems - C. Wang and S. D'Souza
- 191 Proton-Conducting Polymeric Electrolytes for Electrochemical Capacitors - M. Morita, N. Ohsumi, N. Yoshimoto, and M. Egashira
- 192 Alkaline Fuel Cells Using Anion-Exchange-Membrane - Z. Ogumi, K. Matsuoka, T. Abe, and Y. Iriyama
- 193 Engineering Effective Bioelectrocatalysis Electrodes for Power Generation - B. Liaw, M. Cooney, F. Quinlan, V. Svoboda, and N. Maynard
- 194 A NMR Spectroscopic Study of Water and Methanol Transport Properties in DMFC Composite Membranes - V. Baglio, A. Arico, V. Antonucci, I. Nicotera, C. Oliviero, L. Coppola, and P. Antonucci
- 195 Kinetics Study of Methanol Oxidation Reaction (MOR) in Carbon Dioxide Poisoned Alkaline Fuel Cells - A. Tewari, V. Sambhy, and M. Macdonald
- 196 Hybridization of Micro Fuel Cells and Rechargeable Batteries for Consumer Electronics Applications - S. Gottesfeld
- 197 Hydrogels in Fuel Cartridge Used as a Diffusion-Rate-Controlling Agent Suppressing the Methanol Crossover in Passively Operated Flat-Pack Type DMFC System - C. Chung, W. Kim, H. Choi, Y. Lee, J. Nam, and S. Cho
- 198 A Microfabricated PEMFC with Low Catalyst Loading Prepared by Sputter Deposition - D. Gruber, N. Ponath, and J. Mueller
- 199 The Performance and Durability of PtCo/C Alloy Catalysts in PEMFCs - S. Kocha, F. Wagner, and H. Gasteiger

- 200 Instability of Pt/C Electrocatalysts in Proton Exchange Membrane Fuel Cells: A Mechanistic Investigation - Y. Shao-Horn, P. Ferreira, and G. la O'
- 201 Utilization of Pt-(Ru) Catalysts in MEA for Fuel Cell Application by Hot-Embossing and Breathing Process of Proton-Exchange Membrane - C. Chung, K. Yu, and W. Kim
- 202 Supporting Materials for Enhanced Electrode Performance in Direct Methanol Fuel Cells - Y. Sung
- 203 A Simple Semi-Analytic Method for Analyzing Fuel Cell Polarization Curves - J. Wang, F. Uribe, and R. Adzic
- 204 A New and Comprehensive Algorithm for Optimum Design & Macro Model Development in PEMFC with Complementary Approach of Exergy and Cost Considerations - H. Ghadami and S. Seyedi Namini
- 205 Proton Transfer Salts: A New Class of Solvent-free, Involatile, Fuel Cell Electrolytes - D. Gervasio, J. Belieres, C. Angell, H. Markusson, and W. Xu
- 206 A Comparative Study on Polyaniline Modified Cathodes in PEMFC - H. Gharibi, M. Zhiani, A. Entezami, R. Abdullah Mirzaiea, M. Khairmand, and K. Kakaei
- 207 Proton Conducting Membranes from Nafion Blends and Composites - R. Wycisk, J. Lin, J. Lee, and P. Pintauro
- 208 Key Phenomena in Proton Exchange Membrane Fuel Cells- Liquid Water Transport - M. Hickner
- 209 Direct Methanol Fuel Cell (DMFC) Performance of Alternative Membranes Under Optimizing Conditions - Y. Kim and B. Pivovar
- 210 Multifunctional Battery and Fuel Cell Composite Structures for U.S. Army Applications - J. Snyder, R. Carter, J. South, M. Hagon, D. DeSchepper, and E. Wetzel