


4th Symposium on Energy Storage: Beyond Lithium Ion

Pacific Northwest National Laboratory June 7-9, 2011 Final Agenda

DAY 1		
Tuesday, June 7, 2011		
Location: Battelle Auditorium		
Time	Speaker	Subject
7:30-8:15		Badging / Continental Breakfast
8:15-8:30	Symposium Chairs Venkat Srinivasan, Jun Liu and Jason Zhang	Symposium Overview
8:30-8:50	Mike Kluse <i>Director, Pacific Northwest National Laboratory & Senior VP of Battelle</i>	Management Welcome
Session 1: General Session on Battery Powered Vehicles and Implications on the Grid		
Chair: Winfried Wilcke		
8:50-9:40	Prof. Juergen Lehold <i>Volkswagen Research</i>	Keynote: Electric Vehicles: Opportunities vs. Challenges
9:40-10:20	Mark Verbrugge <i>General Motors</i>	Traction Batteries: Automotive Requirements, Current Status and Challenges Ahead
10:20-10:40	Break	
10:40-11:20	Chengwei Xiao Jiqiang Wang <i>Tianjin Inst. Power S.</i>	The Present Status and Road Map of Developing EV and Advanced Lithium Batteries in China
11:20-12:00	Michael Kintner-Meyer <i>PNNL</i>	Electrification of Transportation from the Electricity Supply's Perspective
12:00-1:00	Lunch	
Session 2: Li-ion Batteries: Present Status and Future Prospects		
Chair: Venkat Srinivasan		
Time	Speaker	Subject
1:00-1:40	Paul Albertus <i>Bosch Research and Technology Center</i>	Availability of the Elements for Scaling Up Batteries for Grid and Transportation Energy Storage
1:40-2:20	Esther Takeuchi <i>U. of Buffalo</i>	Moving Beyond Current Energy Density Boundaries
2:20-3:00	Kristin Persson <i>LBNL</i>	Ab Initio Approaches to Understanding, Optimizing and Discovering Li-ion Electrode Materials
3:00-3:20	Break	
3:20-4:00	Yet-Ming Chiang <i>MIT</i>	Scaling Lithium Ion (or other) Chemistries Using a Flow Battery Architecture
4:00-4:40	David Danielson <i>ARPA-E</i>	The BEEST: An Overview of ARPA-E's Program in Ultra-High Energy Batteries for Electrified Vehicles



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DAY 2

Wednesday, June 8, 2011
Location: Battelle Auditorium

Session 3: Li-air Batteries-1


Chairs: Jun Liu

Time	Speaker	Subject
7:30-8:30		Continental Breakfast
8:30-9:10	Peter Bruce <i>U. St Andrews, UK</i>	Understanding Non-aqueous Li-air
9:10-9:50	Khalil Amine <i>ANL</i>	Next Generation Lithium Ion Battery and Beyond Lithium Battery
9:50-10:30	Steve Visco <i>Polyplus</i>	Rechargeable Lithium-air Battery Technology Based on Protected Lithium Electrodes (PLEs™)
10:30-10:50	Break	
10:50-11:30	Jason Zhang <i>PNNL</i>	Stable Operation of Li-air Batteries
11:30-12:10	Karim Zaghib <i>HydroQuebec</i>	HQ Lithium for Rechargeable Batteries and Metal-air Technology
12:10-1:00	Lunch	

Session 4: Li-sulfur Batteries

Chair: Esther Takeuchi

Time	Speaker	Subject
1:00-1:40	Chengdu Liang <i>ORNL</i>	Advanced Materials for Li-S Batteries
1:40-2:20	Rüdiger Schmidt <i>BASF</i>	Electrode Development @ BASF for Lithium/Sulfur Batteries
2:20-3:00	Prof. Xinping Qiu <i>Tsinghua U., China</i>	Sulfur/CNT Composite Electrode for Li/S Battery
3:00-3:20	Break	
3:20-6:30	Poster Presentations / Discussions – Location: BSF/CSF lobby	
4:30-6:30	Reception (heavy appetizers) – Location: BSF/CSF lobby	



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DAY 3

Thursday, June 9, 2011

Location: Battelle Auditorium

Session 5: Li-S and Li-air Batteries-2

Chair: Alan Luntz

Time	Speaker	Subject
7:30-8:30		Continental Breakfast
8:30-9:10	Linda Nazar <i>U. Waterloo</i>	Overcoming the Challenges in Li-S and Li-air Batteries
9:10-9:50	Jens Hummelshøj <i>Stanford U.</i>	Electrochemistry at Metal-air Battery Cathodes from First Principle Calculations
9:50-10:30	Larry Curtiss <i>ANL</i>	Computational Studies of Electrolyte Stability for Li-air Batteries
10:30-10:50	Break	
10:50-11:30	Petr Novak <i>Paul Scherrer Institute</i>	Li-S and Li-air Systems: The Characterization Challenge
11:30-12:10	Cody Friesen <i>U. Arizona</i>	Oxygen Reduction in Ionic Liquids – Tuning Proton Thermodynamics to Optimize Metal-air Batteries
12:10-1:00	Lunch	

Session 6: Non-lithium Systems

Chair: Yet-Ming Chiang

Time	Speaker	Subject
1:00-1:40	Trygve Burchardt <i>Revolt</i>	The Metal Air Flow Battery – Benefits of a New Architecture and the Latest Results
1:40 -2:20	John Lemmon <i>PNNL</i>	Planar Sodium Metal Halide Battery for Renewable Integration and Grid Applications
2:20-3:00	Luis Ortiz <i>MIT</i>	An Electrometallurgical Approach to Cheap, Grid-Scale Energy Storage Systems
3:00-3:30	Break before Tours	
3:30-6:00	<p>Optional Tours (Please plan to wear comfortable, closed-toed shoes for the tours)</p> <ul style="list-style-type: none"> • Electricity Infrastructure Operations Center (EIOC) & Vehicle Smart Charging Station tour • Environmental Molecular Sciences Laboratory (EMSL) tour • Wine tasting tour <p>Must sign up for tours. There is limited space on each tour and they will be filled on a first-come, first-served basis.</p>	