



2014 **MRS**
SPRING MEETING
& EXHIBIT

April 21–25, 2014
San Francisco, California

CALL FOR PAPERS

Abstract Deadline: November 1, 2013

www.mrs.org/spring2014

REMINDER: In fairness to all potential authors,
late abstracts will not be accepted.

MRS Symposium N: Research Frontiers on Electrochemical Energy Storage Materials— Design, Synthesis, Characterization and Modeling

Electrochemical energy storage, and particularly Li-ion batteries, have significantly impacted and improved our way and quality of life. To meet this century's demands for environmentally friendly transportation and cleaner energy sources, scientists and inventors must identify materials and systems that can store more energy per unit weight or volume while, at the same time, ensure prolonged cycling, high power, safety and affordability. Finding novel materials and understanding how they function, broadly speaking, are two of the most critical roadblocks in the path to overcome these considerable challenges. This symposium aims to gather experts in the field of electrochemical energy storage to showcase the research frontiers in computational and experimental design and optimization of materials and systems, novel synthesis methods and real-time diagnostic techniques.

A special session will be dedicated to providing a high-level retrospect on the specific developments resulting from the Energy Frontier Research Centers, which will be in their fifth year of activities and are funded by the U.S. Department of Energy.

Topics will include (but will not be limited to):

- New electrode and electrolyte materials including inorganic, organic and hybrid compounds
- Size-dependent phenomena in energy-storage materials and new-assembly methodologies
- Mechanical, physical and chemical interactions of materials at the nano- and mesoscale
- Computation and modeling approaches for materials design and optimization
- Intercalation, alloying and conversion reactions in Li-ion batteries
- Electrode/electrolyte interfacial phenomena in Li-ion systems
- New battery systems beyond Li-ion

A joint session with Symposium O: *Novel Energy-Storage Technologies Beyond Li-ion Batteries—From Materials Design to System Integration* is being considered.

Invited speakers include:

Hector D. Abruña (Cornell Univ.), **Peter G. Bruce** (Univ. of St. Andrews, United Kingdom), **Karena W. Chapman** (Argonne National Lab), **George Crabtree** (Argonne National Lab), **Nancy J. Dudney** (Oak Ridge National Lab), **Clare P. Grey** (Univ. of Cambridge, United Kingdom), **Ryoji Kanno** (Tokyo Inst. of Technology, Japan), **Steven Kaye** (Wildcat Discovery Technologies), **Kevin Leung** (Sandia National Labs), **Hong Li** (Inst. of Physics, China), **Delia J. Milliron** (Lawrence Berkeley National Lab), **Linda F. Nazar** (Univ. of Waterloo, Canada), **Petr Novak** (Paul Scherrer Inst., Switzerland), **Gary W. Rubloff** (Univ. of Maryland), **Keith Stevenson** (Univ. of Texas at Austin), **Yang-Kook Sun** (Hanyang Univ., R.O. Korea), **Michael M. Thackeray** (Argonne National Lab), **Chongmin Wang** (Pacific Northwest National Lab), **David J. Wesolowski** (Oak Ridge National Lab).

Symposium Organizers

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