Advances in Chemistry

Special Issue on

Energy Conversion and Storage Technologies: Materials, System Design, and Applications

CALL FOR PAPERS

A large number of energy conversion and storage devices have been developed in past years to address global energy scarcity and environmental issues. These electrochemical energy systems cover extremely versatile technologies, ranging from fuel cells to batteries, flow batteries, supercapacitors, and superconducting magnetic energy storage systems.

Fuel cells, which convert chemical energy to electricity with zero C emission, are classified as carbonate, solid oxide, phosphoric acid, and ion exchange membrane according to types of electrolytes involved. The current state of fuel cell technology continues to be improved in terms of cost, lifetime, and performance. Energy storage has received intensive academic investigation since these devices remain the most common source for industrial and household utilization. More efforts are necessary in order to further increase system capacity and efficiency, as well as optimize grid integration.

This special issue invites original research papers as well as review papers to be compiled as a valuable source of information and analysis covering the technical issues and latest discoveries of fuel cell and battery technologies.

Potential topics include, but are not limited to:

- Novel electrolyte materials
- Electrode materials and processes
- Ionic transport phenomena across electrode-electrolyte and solid-state interphases
- Physical and analytical electrocatalysis
- Multiscale theoretical and computational modeling
- Electrochemical system fabrication and design
- Advanced grid integration

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/ac/physical.chemistry/ecst/.

Lead Guest Editor
Hanping Ding, Colorado School of Mines, Golden, USA
hding@mines.edu

Guest Editors
Ye Liu, Colorado School of Mines, Golden, USA
yeliu@mines.edu

Zetian Tao, Yancheng Institute of Technology, Yancheng, China
newton@mail.ustc.edu.cn

Shumin Fang, University of South Carolina, Columbia, USA
shuming@cec.sc.edu

Massimo Viviani, National Research Council, Genova, Italy
massimo.viviani@cnr.it

Manuscript Due
Friday, 24 June 2016

First Round of Reviews
Friday, 16 September 2016

Publication Date
Friday, 11 November 2016