Special Issue

Development of Novel Electrode and Electrolyte Materials for Lithium and Sodium Ion Batteries

Message from the Guest Editors

The development of novel electrode and electrolyte materials is of great interest concerning the need to meet the increasing demands for advanced lithium/sodium ion batteries (LIBs/SIBs). The performance enhancements of LIBs/SIBs depend critically on the development of novel anode materials with a high capacity, low voltage platform, high electronic conductivity and robust structure, and novel cathode materials with a high capacity, high-voltage platform, high lithium/sodium ion diffusion coefficient and high reaction reversibility, novel electrolyte with high ionic conductivity, high chemical stability, wide electrochemical window and excellent nonflammability. This Special Issue focuses on the synthesis, characterization and theoretical calculation of novel electrode and electrolyte materials for performance improvements and mechanism revelations of lithium/sodium ion batteries. Keywords

- lithium/sodium ion battery anode
- lithium/sodium ion battery cathode
- lithium/sodium ion battery electrolyte
- high capacity
- extended voltage range
- long life cycle
- high safety
- performance enhancement mechanism
- energy storage mechanism

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Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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