

Special Issue

Methodologies and Mechanisms in Facet Engineering for Next-Generation Ion Batteries

Message from the Guest Editors

The materials used in rechargeable ion batteries, including non-aqueous systems (such as lithium ions, sodium ions, potassium ions, magnesium ions, or calcium ions) and aqueous zinc-ion batteries, have been developed to the deepest level, reaching a point beyond structural modifications at nano-/micrometer scales. This means that facet engineering has become increasingly important in recent years. The performances of the rechargeable ion batteries mentioned above are generally closely related to the lattice or facet structure of the candidate materials, such as the lattice spacing and lattice exposed ratios, which are of high importance in materials science but have rarely been investigated, particularly their correlations with ion storage behaviors and the corresponding mechanisms that could originally influence ion storage performance. Thus, this Special Issue will cover methodologies and related mechanisms for facet engineering in material synthesis (mostly concerning inorganic materials). Performance metrics could include capacity delivery, cyclic performance, and related electrochemical ion storage mechanisms.

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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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