Special Issue

Advances in Lithium Battery Technologies

Message from the Guest Editors

A Li metal battery is one of the most promising next generation batteries in achieving the high energy density. However, the uncontrolled Li growth and the accompanying side-reactions will cause thermal runaway and explosion hazards. Another major issue is the use of organic liquid electrolytes in commercial Li-ion batteries, especially the extremely high reactivity of liquid organic electrolytes with Li metal anode in rechargeable Li metal batteries cause safety concerns, such as fire hazard. In recent years, growing research efforts have been devoted to improving the understanding of Li metal batteries, especially the Li metal solid-state batteries. This Special Issue will focus on the recent progress on advanced characterization of Li metal anode and solid-state electrolyte by using variety ex/in situ techniques, attempt to clarify the fundamental mechanisms and provide the design guidance for the development of high performance and safe Li metal solid-state batteries.

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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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