Special Issue

Synthesis and Characterization of Superionic Conductive Glass and Ceramics

Message from the Guest Editor

Rechargeable Li-ion batteries have developed from being the power source for mobile phones and notebook computers to being a large-scale power source for electric vehicles and electric power storage due to the growing interest in energy and environmental problems. However, there is a strong concern about the cost and possible exhaustion of Li resources. Therefore, a significant shift in attention has been taking place towards new types of rechargeable batteries, such as low cost Na-based systems. Another important aspect is their potential compatibility with the all-solid-state design, where a solid electrolyte is used to replace the liquid one, leading to a simple battery design, a long lifespan, and excellent safety. The key to the success of the all-solid-state battery design is the challenge of finding solid electrolytes possessing acceptably high ionic conductivities at room temperature. This Special Issue will focus on and highlight the state of the art of research in superionic conductive glass and ceramics. This Special Issue will also provide comprehensive reviews of excellence in materials and processing.

Guest Editor

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Deadline for manuscript submissions

closed (20 November 2022)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/68287

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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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