Special Issue

Advanced Design and Synthesis of Electrode Materials

Message from the Guest Editor

The increasing demand for energy and the electrification of mobility in modern society have increased the demand for higher energy density, power density, and safety standards as well as lower costs. Consequently, lithium ion batteries, ubiquitously applied from portable electronics to transportation or grid storage applications, now do not meet the requirements for many applications. Moreover, the low abundancy and uneven distribution of lithium sources are increasing the cost of lithium-based technologies. In order to overcome these challenges and achieve higher power and energy densities, novel electrode architectures have been proposed to enhance the cycling performance of electroactive materials, rate capabilities, and electrode-electrolyte interactions, among other. This Special Issue aims to present recent advances in the design and synthesis of nanoarchitectured electrode materials, focusing on novel chemistries and nanostructuration strategies applied to positive or negative electroactive materials for metal-ion batteries and capacitors and metal-air and lithium-sulfur batteries.

Guest Editor

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Deadline for manuscript submissions

closed (30 September 2021)



an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed



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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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