Special Issue

Nanomaterials for Ion Battery Applications

Message from the Guest Editor

Rechargeable batteries, ranging from small portable devices to large energy storage systems, have emerged as indispensable electrochemical devices in our daily lives. Nanotechnologies are positioned to play a critical role in significantly improving battery performance. The rational design of various nanomaterials has been a major research theme in the process of developing high-performance batteries. Among various types of rechargeable batteries, Li-ion batteries are presently regarded as market-leading technologies thanks to their many beneficial features. However, Li-ion batteries still have limitations to be overcome, and thus there is ongoing research into several different types of potential next-generation batteries.

This Special Issue of Nanomaterials will cover the advancements in recent nanotechnologies and nanomaterials for various ion batteries (Li-ion batteries, sodium-ion batteries, Li–sulfur batteries, multivalent ion batteries, aqueous batteries, etc.). The development of new functional nanomaterials, as important components in these batteries, is the central topic to be discussed in this Special Issue.

Guest Editor

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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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