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Recent Progress in Nanoelectrode Materials for Batteries and Supercapacitors

Guest Editor:

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Message from the Guest Editor

Recent research has found that nanoelectrode materials provide significantly improved ion transport and electronic conductivity compared to traditional battery and supercapacitor electrode materials. They also occupy all available embedding sites in the particle volume, achieving high specific capacity, and fast ion diffusion. These characteristics enable nanoelectrode materials to withstand high currents, providing a promising solution for high-energy-density and high-power-density energy storage/conversion devices. On the other hand, energy storage/conversion devices have been developed vigorously. By combining 2D nanostructured materials with high electronic conductivity and high-energy density, or assembling them into 3D electrodes at the nanoscale, the electrochemical performance of the devices is significantly improved.

This Special Issue will comprehensively introduce the progress of nanostructures in improving performance of batteries and supercapacitors. We invite authors to publish original research and review articles covering the current progress of batteries and supercapacitors with nanoelectrodes.



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Special Issue



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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.

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