Special Issue

Development of Advanced Nanomaterials and Electrolytes for Batteries and Supercapacitors

Message from the Guest Editor

Electrochemical energy conversion and storage is a solution to overcome the drawbacks and limitations of existing fossil-fuel-based technologies. The development of electrochemical energy conversion and storage devices has two main directions: the development of high-energy batteries and of high-power supercapacitors. The former has high-energy densities through the faradaic lithium redox reaction, while the latter exhibit high-power densities and a long cycling life owing to the fast physical adsorption/desorption of electrolyte ions on the electrode surface. The exploration of advanced electrode nanomaterials, as well as the electrolyte's composition, determines the crucial electrochemical device parameters. This Special Issue will attempt to cover the most recent advances in electrolytes for batteries and Supercapacitors, concerning not only the design, synthesis, and characterization of such electrode materials and electrolytes but also reports of their functional and smart properties to be applied in energy-storage devices.

Guest Editor

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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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