Special Issue

High-Capacity Supercapacitors: Nanotechnologies and Nanomaterials

Message from the Guest Editors

With the increasing global energy crisis and environmental pollution, the conversion and utilization of new energy and efficient storage technology have become frequently debated topics of scientific research. Supercapacitors, also known as ultracapacitors or electrochemical capacitors, have broad application prospects in electronic devices, electric vehicles and smart grids due to their high power density, fast charging and discharging, long cycle life, and good safety. Accordingly, efficient strategies to improve the capacity or energy density of supercapacitors include developing novel electrode materials with a multidimensional nanostructure, designing optimized electrolytes and building asymmetric/hybrid devices. Nanotechnologies and nanomaterials have revolutionized the field of supercapacitors, leading to significant advancements in their energy storage capacity and overall electrochemical performance. Therefore, in this Special Issue, we are looking for research into novel designs of nanostructured electrode materials, electrolytes and supercapacitor devices, as well as storage mechanisms analysis using experiments or theoretical calculations.

Guest Editors

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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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