

Special Issue

Nanostructured Cathode and Anode Materials: Synthesis and Applications

Message from the Guest Editor

Dear colleagues, Nanostructured materials are currently of interest for lithium ion storage devices because of their high surface area, porosity, etc. These characteristics make it possible to introduce new active reactions, to decrease the path ways for Li ion transport, to reduce the specific surface current rate, and to improve stability and specific capacity. The development of next-generation energy storage devices with high power and high energy density is the key to the success of electric and hybrid electric vehicles, which are expected to partially replace conventional vehicles and help address air pollution and climate change.

These energy storage technologies will rely on innovative materials science, i.e. developing electrode materials capable of being charged and discharged at high current rates. Of course, there are some disadvantages, such as a more complex synthesis process for the nanomaterials, which will increase the cost of lithium ion batteries. Therefore, the next challenge will be to develop simple synthesis methods for large-scale production of nanostructured active electrode materials.

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.

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