Special Issue

Current Research in Nanocrystals and Their Implications for Electrochemical Energy Storage, Conversion, and Optoelectronic Applications

Message from the Guest Editors

This Special Issue aims to offer a thorough overview of the latest research trends, technological advancements, and future directions in the field of nanocrystals. By bridging fundamental science and practical applications, it seeks to inspire further innovation and collaboration among researchers, paving the way for the next generation of energy and optoelectronic technologies. We look forward to receiving your contributions and contributing to the discourse on this transformative topic. Key Highlights: (i) Advanced synthesis techniques for high-quality nanocrystals with controlled size, shape, and surface properties; (ii) Novel strategies to enhance the performance and stability of nanocrystal-based energy storage systems; (iii) Breakthroughs in nanocrystal catalysis for efficient electrochemical energy conversion; (iv) Innovations in optoelectronic devices leveraging the unique properties of nanocrystals; (v) Theoretical insights and computational models that deepen the understanding of nanocrystal behavior and guide experimental efforts.

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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. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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