Special Issue

Controllable Nanostructured Halide Perovskite Materials

Message from the Guest Editor

Halide perovskites have garnered significant attention due to their excellent electrical and optical properties, including tunable band gap, high-charge carrier mobility, long carrier lifetime, strong optical absorption, high luminescence efficiency, and notable defect tolerance. Specifically, halide perovskite nanomaterials, including 0D quantum dots, 1D nanowires, 2D nanoplatelets, and their combinations with mixed dimensions, combine the unique advantages of both halide perovskites and nanostructures. This Special Issue aims to collate recent advances in the design, synthesis, and application of halide perovskite nanomaterials, including, but not limited to, the following: Synthesis of halide perovskite nanomaterials;
Design of novel halide perovskites beyond lead and tin;
Defect and interfacial passivation;
Advanced applications of halide perovskite nanomaterials;
Optoelectronic devices, including photovoltaics, light-emitting devices, photodetectors, and radiation detectors;
Photocatalysts and photosynthesis;
Biomedical applications. See more information in: https://www.mdpi.com/si/218582

Guest Editor

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Deadline for manuscript submissions

closed (20 May 2025)

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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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