Special Issue

Low-Dimensional Perovskite Materials and Devices

Message from the Guest Editors

Low-dimensional perovskites (2D, 1D, and even 0D) with unique crystal structures that incorporate larger, less volatile, and generally more hydrophobic organic cations exhibit improved thermal, chemical, and environmental stability, thus leading to more stable optoelectronic devices. Moreover, low-dimensional perovskites can play different roles within optoelectronic devices, either as primary materials or as a capping layer on top of a 3D perovskite layer (e.g., 2D/3D perovskite heterostructure). Reducing the crystal dimension of perovskite will result in quantum and dielectric confinements, leading to larger optical band gaps and exciton-binding energies. Topics to be covered within this Special Issue include, but are not limited to, the following: Synthesis and characterization of perovskite and low-dimensional perovskite materials; Fundamental studies of perovskite materials; Optoelectronic applications of perovskite and low-dimensional perovskite materials; Modeling and theoretical studies; Environmental impact and sustainability of perovskite and low-dimensional perovskite materials and devices.

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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.

Editor-in-Chief

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