

## Special Issue

# Practical Perovskite Nanomaterials for Modern Optoelectronic Devices

### Message from the Guest Editors

Metal halide perovskites have revolutionized optoelectronics with their exceptional combination of optical and electronic properties: broad absorption coefficients, bandgap tunability, and solution-processable nanoscale synthesis. Today, perovskite nanomaterials—including nanocrystals, quantum dots, and 2D-layered structures—stand at the forefront of next-generation optoelectronics, offering unprecedented opportunities for energy conversion, light emission, and photonic integration. This Special Issue aims to bridge the gap between fundamental science and practical implementation by showcasing state-of-the-art research on perovskite nanomaterials for modern optoelectronic applications. We seek to highlight innovations that address critical challenges in efficiency, stability, scalability, and environmental sustainability while exploring emerging developments in device integration. The scope of this topic includes fundamental properties of perovskite nanomaterials at the nanoscale, energy conversion (solar cells), light emission (LEDs, lasers), interdisciplinary solutions for practical deployment, including roll-to-roll manufacturing, flexible electronics, and tandem architecture.

### Guest Editors

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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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### Editor-in-Chief

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