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Nanomaterials and Thin Films for Perovskite Solar Cells

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Deadline for manuscript submissions:
closed (20 July 2024)

Message from the Guest Editor

Recently, perovskite solar cells have emerged as the most promising new generation of photovoltaic technology. Although significant progress with power conversion efficiency exceeding 25% has been made in recent years, the advances in new perovskite materials and additives, understanding of the role of interfaces in devices, and new techniques for perovskite solar cells are still far from satisfactory. In this Special Issue, we would like to provide an overview of the recent developments in the field of perovskite solar cells based on nanomaterials and thin films, including, for example, new structures of perovskite materials, lead-free perovskite solar cells, new fabrication techniques, the evolution of device architectures, degradation mechanisms for devices under water, heat and light, the challenges and outlooks of perovskite solar cells, and so on. Computational modeling and theoretical approaches for the physical properties and commercialization of perovskite solar cells also welcome.

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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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