Special Issue

Thin-Film Solar Cell: Mechanism, Property and Application

Message from the Guest Editors

As a kind of inexhaustible renewable energy, the development and utilization of solar energy have important scientific significance to alleviate energy problems and environmental problems. The efficiency improvement mechanism of thin film photovoltaic devices is one of the main topics in the field of renewable energy. Thin-film photovoltaic (TFPV) technology offers more versatility than silicon (Si) due to its compelling features of being lightweight and compatible with flexible and rigid substrates and compatibility with opaque and translucent architectures. This Special Issue focuses on the latest experimental advances and theoretical studies of TFPV devices, outlining various strategies to improve the performance of solar cells. We invite authors to contribute original research articles and review articles covering the current progress on TFPV. Potential topics include, but are not limited to:

- Nanoscale defects and phase regulation in TFPV materials;
- Optimization of power conversion efficiency of TFPV devices;
- Efficiency improvement mechanism of TFPV devices;
- The wide applications of TFPV 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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