Special Issue

Advances in Nanotechnology of Perovskite and Silicon Solar Cells

Message from the Guest Editor

Solar energy, as the largest single available source of clean energy, dwarfs all other renewable and fossil-based energy resources combined. It can be converted into thermal, electrical, and controllable chemical energy by solar heating and cooling, concentrating solar power, photovoltaics, and photocatalytic processes. Nanomaterials and nanotechnologies show great potential in solar energy conversion and storage applications. This Special Issue is mainly dedicated to the nanomaterials and nanotechnologies in solar energy conversion, with a focus on perovskite solar cells and silicon solar cells. Potential topics include, but are not limited to, the following:

- Nanomaterial development, synthesis, and fabrication for renewable energy applications;
- Advancements in concepts, mechanisms, modeling, and processes related to nanomaterials and nanotechnologies for solar energy;
- Two-dimensional materials (graphene, MoS2, etc.);
- Economic characteristics of photovoltaic technologies.

Guest Editor

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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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