



Recent Progress in Solar Cells Based on Nanomaterials

Guest Editors:

Dr. Chao Ding

1. Institute of New Energy and Low-Carbon Technology, Sichuan University, Chengdu 610065, China

2. Faculty of Informatics and Engineering, The University of Electro-Communications, 1-5-1 Chofugaoka, Chofu, Tokyo 182-8585, Japan

Dr. Hua Li

School of Physics and Electronic Information, Yan'an University, Yan'an 716000, China

Deadline for manuscript submissions:

closed (10 July 2024)

Message from the Guest Editors

Nanomaterials offer new possibilities to enhance the performance of solar cells by exploiting their unique physical and chemical properties. Nanomaterials can be used to improve the light absorption, charge transport, charge separation, and stability of solar cells, as well as to create novel device architectures and concepts.

This Special Issue aims to provide a comprehensive overview of the recent progress in solar cells based on nanomaterials, covering various types of nanomaterials, such as metal nanoparticles, quantum dots, nanowires, nanotubes, graphene, perovskites, and organic nanomaterials, as well as various types of solar cells, such as silicon, thin-film, dye-sensitized, organic, and hybrid solar cells. The Special Issue will also highlight the challenges and opportunities for the future development of nanomaterial-based solar cells, such as the synthesis, characterization, integration, and optimization of nanomaterials; the understanding of the underlying mechanisms and phenomena; the scaling-up and fabrication of devices; and the environmental and economic impacts of nanomaterials





an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Shirley Chiang

Department of Physics, University
of California Davis, One Shields
Avenue, Davis, CA 95616-5270,
USA

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.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility: indexed within Scopus, SCIE (Web of Science), PubMed, PMC, CAPlus / SciFinder, Inspec, and other databases.

Journal Rank: JCR - Q2 (*Chemistry, Multidisciplinary*) / CiteScore - Q1 (General Chemical Engineering)

Contact Us

Nanomaterials Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/nanomaterials
nanomaterials@mdpi.com
[X@nano_mdpi](https://x.com/nano_mdpi)