Special Issue

Emerging Photovoltaic Materials and Solar Cells

Message from the Guest Editor

Photovoltaics (PV) play an increasingly important role in the production of electricity. Presently, PV modules are mainly based on silicon. However, despite its many advantages, the production of silicon and cells is energy-consuming and complicated. On the other hand, the efficiency of silicon cells is already close to maximal theoretical value, and further production cost reduction seems to be difficult. Therefore, for many years, extremely intensive research has been carried out on new materials that could be used in cheap, high-efficiency solar cells on based on Earth-abundant materials. Promising materials and structures for third-generation thin-film cells have emerged in photovoltaics. Emerging PV include but are not limited to devices such as perovskite, perovskite/Si tandem, perovskite/CIGS tandem, dye-sensitized, inorganic CZTSe, quantum dots, and organic solar cells. Despite great advancements, these technologies are not yet mature enough to be used in mass production. The biggest obstacle is the lack of long-term stability. Research on this type of cells is extremely intensive in many laboratories and brings new achievements in efficiency and stability.

Guest Editor

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Deadline for manuscript submissions

closed (10 April 2023)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/70969

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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