



Emerging Photovoltaic Materials and Solar Cells

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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.





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Message from the Editor-in-Chief

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