Special Issue

Advances in Perovskite Materials and Solar Cells

Message from the Guest Editors

Recently, halide perovskites have been thrust into the limelight as the next generation photovoltaic technology, owing to their low cost, facile fabrication, and outstanding semiconductor properties. Over the past decade, polycrystalline perovskite solar cells have achieved high energy conversion efficiencies, comparable to the crystalline silicon devices that have been in development for more than three decades. The excellent defect tolerance of the absorber and diverse modifications at the interface have led to substantial efficiency and stability improvements. However, the energy loss modes, carrier dynamics, interfacial interactions, device failure mechanisms, and long-term stability inside the materials and devices still require extensive exploration. This Special Issue covers these topics and focuses on optimization strategies and potential mechanisms to improve device performance and long-term stability.

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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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