

Special Issue

Perovskite Photoelements: A New Generation of Solar Cells

Message from the Guest Editors

Perovskite solar cells (PSCs) have become a widely studied topic in materials science. Their low cost of production combined with their record-breaking single-junction photovoltaic efficiencies have captured the attention of thousands of researchers in recent years; however, this has come bundled with the challenge of low intrinsic and extrinsic stability and various efficiency loss mechanisms, such as hot carrier cooling. In recent years, many cutting-edge computational studies have been performed to interrogate the properties of these materials; however, an analysis of the literature shows that there are still plenty of questions still awaiting an answer. Thus, there is a clear and urgent need to understand the fundamental mechanisms which degrade the performance of these materials. In this Special Issue, we focus on frontier computational research, including the fundamentals, properties and challenges of designing cutting-edge PSC photovoltaic devices. However, we generally seek works on the topic of the theoretical simulation of perovskite materials, and thus papers regarding adjacent topics such as 2D perovskites, perovskite sensors, double perovskites.

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Message from the Editor-in-Chief

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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