

Special Issue

Recent Advances in Semiconductors for Solar Cell Devices

Message from the Guest Editor

Semiconductors play a significant role in solar energy conversion to reduce carbon emissions caused by fossil fuels and other human activities and limit global warming. Recent advances in semiconductor solar cells have focused on efficiency improvement, cost-effectiveness and stability. Various materials have been studied including silicon, perovskites, compound semiconductors such as GdTe, GaAs or alloys such as copper indium gallium selenide (GIGS), nanostructures such as quantum dots, quantum wires, 2D transition metal dichalcogenides, graphene and related materials and organic materials. Multiple-junction solar cells, developed by stacking multiple layers with different energy bandgaps, demonstrate considerable enhancement of conversion efficiency exceeding the Shockley–Queisser limit for a single-junction solar cell as they absorb a broader spectrum of solar light. We invite you to submit your original research articles and reviews on solar cells based on semiconductor materials and nanostructures. Both experimental and theoretical studies are welcome.

Guest Editor

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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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