

Special Issue

Solar Cells: Materials Design and Performance Optimization

Message from the Guest Editors

This Special Issue seeks to catalyze progress in solar energy and focuses on the design, preparation, and optimization of advanced solar energy materials and devices. It seeks to highlight strategies for enhancing performance, durability, and manufacturability while addressing sustainability. Contributions are encouraged in the form of experimental and theoretical studies, to accelerate the transition to commercially viable, next-generation solar technologies. **Topics of interest include, but are not limited to, the following:**

- Novel materials (perovskites, organics, quantum dots, thin-film CIGS/CZTS, $\text{Sb}_2(\text{S,Se})_3$ and synthesis techniques.
- Nanostructured and hybrid materials for light absorption/charge transport.
- Interface engineering and defect passivation strategies.
- Stability enhancement and degradation mechanisms under operational conditions.
- AI-driven material discovery and performance optimization.
- Tandem, bifacial, and transparent PV.
- Advanced characterization and computational modeling.

This Special Issue welcomes original research and reviews to address global energy challenges through innovative solar energy solutions.

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Message from the Editor-in-Chief

Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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