Special Issue

Advances in Tandem Architectures toward High-Efficiency Solar Cells

Message from the Guest Editors

Tapping the vast energy available from the sun in the form of electricity and chemical fuels has the tremendous potential to address the global energy supply and climate change. Over the years, power conversion efficiencies have improved drastically due to both material innovation and advanced processing techniques. Of those, tandem architectures have emerged which are extremely promising when it comes to pushing the frontiers beyond single junction efficiency limits due to their efficient utilization of the solar energy spectrum and innovation in device design. Recently, with the emergence of perovskite materials and developments in thin films (CIGS,CZTS, Sb2Se3), solar cells have drastically changed the landscape with more options available to stack different material combinations in 4-T and 2-T configurations. Additionally, 3-T design is also attracting attention due to its unique operational functionality, which relaxes the current matching criterion. And contact layers are becoming increasingly important for monolithic cell design. So, this Special Issue calls for high-quality research progress on tandem solar cell materials, design, contact layers, and their utilization.

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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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