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New Technologies in Photovoltaic Solar Cells

Guest Editor:

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Message from the Guest Editor

Dear Colleagues,

Photovoltaics (PV) solar cells are an exciting and promising approach for sustainable and clean renewable energy generation, offering different approaches in terms of device PV system design, modelling, fabrication, and analysis for conversion efficiency improvement. For sustainable PV systems, nano-structured solar cells have a great potential to reduce the cost by eliminating wafer slicing and reducing material consumption by a factor of higher than ten. The current progress of PV systems is causing the demand for silicon wafers to outstrip the capacity to supply, creating a market entry opportunity for PV technology and nano-structured PV cells. For large-area devices required for realistic applications, a proper understanding of the processes can assist in achieving high conversion efficiency for different nano-structured or PV cells. Research and development are focusing on new, exotic, and simple materials and devices, providing sustainable energy systems. However, there is a need to pursue simple manufacturing processes for PV in a focused manner.

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Message from the Editor-in-Chief

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