

Beyond the state-of-the-art single junction cells, photonic design plays a crucial role in the next generation of photovoltaics, including tandem and self-adaptive solar cells, and to extend the ...

In Section 2, we present a detailed examination of the optical benefits arising from advanced LT strategies on thick c-Si slabs, along with electrical generation profiles when integrated into ...

Solar energy, powered by silicon solar cells, plays a critical role in this transition with silicon (Si)-wafer-based technology holding 97% of the market share.

This Review provides an overview of state-of-the-art perovskite/silicon TSCs with particular attention to three key areas: efficiency, stability and scalability.

We present historical context and review recent advances in the realisation of a photosensitised silicon solar cell, highlighting key theoretical and experimental developments.

Photonics technology has significantly improved the efficiency of solar energy systems, particularly in photovoltaic (PV) panels. By employing high-efficiency multi-junction solar cells and ...

This review explores b-Si comprehensively, discussing its fabrication processes, distinctive properties, and contributions to both solar energy conversion and photonic technologies.

We provide a comprehensive perspective on advancing high-performance all-silicon photonic devices and systems. By fully leveraging the inherent potential of silicon, diverse ...

As more than 90% of the commercial solar cells in the market are made from silicon, in this work we will focus on silicon-based solar cells.

We chart the generational trends in silicon photonics technology, drawing parallels from the generational definitions of CMOS technology.

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