

Title: Self-generating solar energy materials

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As an essential initial step towards clean and sustainable energy, this research focuses on innovative materials and structural designs for maximizing solar energy conversion and harvesting.

A fully integrated flexible solar-thermoelectric generator is demonstrated utilizing Ag₂Se thin films as both efficient photothermal absorber and thermoelectric generators. The device delivers ...

China's researchers are moving closer to creating building materials to generate their own clean power. Luminescent solar concentrators (LSCs) are emerging as a promising solution, ...

Silicon-based solar cells dominate the market, but emerging materials like perovskite and organic photovoltaics offer improved efficiency and flexibility. PV generators are widely used in ...

Studies have focused on solar energy for power generation, encompassing photovoltaic and solar thermal technologies. For example, Dada et al. [11] provided a comprehensive summary of ...

Thermoelectric generators have a promising application in the field of sustainable energy due to their ability to utilize low-grade waste heat and their high reliability. The sun radiates a large ...

Solar cell fabrication has undergone extensive study over the past several decades and improvement from one generation to another. The first solar cells were studied and grown on silicon wafers, in ...

Herein, we propose an energy harvesting strategy to realize self-sustaining power generation by utilizing solar and ambient energy during the daytime, radiative cooling and ambient ...

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