Vaporization lamp solar power generation

In this review, we aim to illustrate the definition, mechanism and figures of merit of interfacial solar vapor generation, and to summarize the development progress of relevant materials ...

To address this challenge, solar-driven water evaporation, also known as solar-to-steam generation, has emerged as a promising eco-friendly and energy-efficient approach.

Due to the extinction of silicon from UV to near-infrared region, Mie resonances in silicon nanoparticles dramatically enhance the absorption of solar light.

Interfacial solar vapor generation, which can efficiently absorb solar light and localize the converted heat into a small amount of water at the water-air interface, enables a substantially improved efficiency of ...

In this report, we will explore the opposite approach, using solar energy to generate cold vapor below room temperature.

When the evaporator absorbs incident solar light, the photon energy is converted into thermal energy through the light-to-heat conversion process. This thermal energy is subsequently transferred to ...

Solar-powered vapor evaporation (SVG), based on the liquid-gas phase conversion concept using solar energy, has been given close attention as a promising technology to address the ...

In this Perspective, the promising solar energy conversion technology of solar vapor generation is firstly discussed. Then the fundamental aspects of how to design the high-efficiency ...

In this work, the fabrication of the material for solar vapor generation using porous silicon treated by electrochemical etching, metal-assisted chemical etching, and electrochemical metal ...

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Here, we demonstrate a hierarchically nanostructured gel (HNG) ...

Here, we demonstrate a hierarchically nanostructured gel (HNG) based on polyvinyl alcohol (PVA) and polypyrrole (PPy) that serves as an independent solar vapour generator.

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