

?? Solar-driven adaptive radiative cooling coating with polymer carbon dots-enhanced photoluminescence for urban skin ?????????????????????????????????????? ...

High operating temperatures significantly reduce photovoltaic (PV) system efficiency, lowering power output by up to 20%. This review examines passive, active, and hybrid PV cooling ...

Many types and designs of solar photovoltaic cells that harness solar energy, yet their efficiency diminishes greatly with an increase in operating temperature. The study aims to investigate the ...

Solar-powered cooling systems lessen dependence on conventional air conditioning systems that consume grid electricity by using solar energy to cool interior areas. These systems usually function by converting sunlight ...

Solar-powered chillers for remote agricultural projects in the GCC are energy-efficient cooling systems that use solar energy to preserve perishable agricultural products in areas without ...

On June 27, 2025, Mr. Ma Ying jeou, former chairman of the Kuomintang in Taiwan, led a delegation of Taiwanese youth from the "Ninth Academy" to visit the Dunhuang Solar Thermal ...

Beat the heat with solar fan hats! Perfect for hiking, fishing, and outdoor adventures. Featuring UV protection, adjustable fans, and lightweight designs. Click to explore top-rated cooling hats ...

Context & scale In this study, we present a novel thermal management solution that transforms a single polymer, polydimethylsiloxane (PDMS), into dual-functional surfaces for heating and ...

?????Spectrally-tailored hygroscopic hydrogels with Janus interfaces for hybrid passive cooling of solar cells????? Small ??? ??????????Janus????????? ...

New cooling composite brings down solar panel temperature by 14.1°C, boosting output by up to 12.9% The sodium polyacrylate-LiCl composite material can absorb moisture in the night and ...

Laser-induced pyrolysis transforms transparent PDMS into either solar-heating or radiative-cooling materials. This single-material strategy provides a simple, energy-efficient, and ...

Highlights o Innovative Pyramid Solar Still (PMPSS) enhances freshwater production efficiency. o Employs cooling pyramid tower, ultrasonic fogger, wave-maker, PCM, and mirrors. o Nine case ...

Solar cooling

From the centralized H-bridge's fin air cooling to the three-level NPC topology's use of heat pipes to tame the heat source; from modular multi-levels to build a thermal redundancy defense line ...

Hybrid solar air conditioners combine traditional cooling technology with solar power to deliver eco-friendly, energy-efficient comfort. Below is a summary table of the top hybrid solar and ...

Recent experiments evaluated the seasonal performance of Multi Junction Tandem solar cells in upgraded (with cooling condition) and standard (without cooling condition) operational states. ...

Passive cooling methods help maintain the efficiency of solar panels without relying on additional energy-consuming equipment. Solar panels function optimally within a specific temperature ...

A significant challenge in achieving radiative cooling under direct sunlight is minimizing its absorption of solar radiation. In this paper, to meet the requirement for low solar absorption in ...

This study presents the development of a three-dimensional multi-physics thermal model for a novel design of a floating photovoltaic system, which incorporates a natural convection cooling ...



Solar cooling

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