

Water is one of the most critical resources for life on Earth, serving as a fundamental component for ecosystems, agriculture, industry, and human consumption. Outdoor water reservoirs, man ...

To control the ratio of water supply to evaporation (Q_s / Q_e) is the critical factor to trigger the salt continuous drop process. This method is also applicable in highly concentrated ...

The aerogel maintains its performance over five months of immersion in water without significant degradation. This low-cost, cellulose-based aerogel offers a promising solution to the issue of ...

The fully bio-based solar-driven interfacial evaporator offers the advantage of being environmentally friendly, but achieving efficient evaporation throughout the day, good salt ...

Abstract Photothermal materials have gained attention for their ability to efficiently convert solar energy into heat for a wide range of applications. Solar-driven water evaporation provides a ...

The synergistic light absorption enhancement of the rGO/MoS₂ hybrid is rationally utilized to achieve excellent broadband solar harvesting. The distinctive E-shaped configuration ...

Interfacial water evaporation driven by solar energy is believed to be one of the most effective methods to reduce water pollution and scarcity globally. However, lower evaporation and salt ...

We present a bioinspired body-centered cubic evaporator (BCE) that integrates cellular fluidics to achieve unprecedented ultrahigh evaporation flux in solar-driven interfacial evaporation ...

Solar energy-driven water evaporation is an environmentally-friendly and promising technology for purifying seawater and wastewater to produce clean water. [7] There has been a focus on ...

New research shows sunlight's oscillating electric field boosts water evaporation by efficiently breaking clusters of molecules, enhancing solar desalination and purification technologies.

Solar-driven interfacial evaporation presents a promising solution to the global freshwater crisis. However, achieving an optimal balance between evaporation rate, efficiency, mechanical ...

This review traces the evolution of solar evaporation from bulk heating to optimized interfacial evaporators, focusing on recent innovations and challenges in surface-engineering solar ...

Treatment of surface water and desalination are two possible solutions to this issue. Among available

technologies for water treatment, solar-based thermal treatment technologies hold ...

Solar interfacial evaporation (SIE) is an emerging technique that utilizes photothermal materials to convert solar energy into localized heat at the water-air interface, thereby achieving efficient ...

Water scarcity is a growing global challenge, intensified by climate change, seawater intrusion, and pollution. While conventional desalination methods are energy-intensive, solar-driven ...

Solar-driven interfacial water evaporation technology offers a green solution for sustainable seawater desalination and wastewater treatment. However, existing materials face challenges ...



Solar water evaporation solutions

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