

Recently, plasmonic nanostructures are emerging as one of the most exciting candidates for solar vapor generation, inspiring the revival of solar-thermal-based water ...

Solar power, also known as solar electricity, is the conversion of energy from sunlight into electricity, either directly using photovoltaics (PV) or indirectly using concentrated solar power. Solar panels use the photovoltaic effect to convert ...

The use of solar energy to produce steam is an effective method to purify sewage or seawater. Herein, we deposited TiN nanoparticles (NPs) on a piece of carbonized ...

The harvesting of solar radiation for steam generation has drawn wide attention as a future sustainable technology for the renewable production of clean water worldwide. ...

effect, plasmon-enhanced solar vapor generation (SVG), has triggered a revived research interest on an ancient solar water purification technology [36-40]. SVG is a natural photothermal ...

Enhancing solar energy conversion is imperative and maximizing solar energy capture remains significant. Here, nanotechnology toward engineering hybrid photosystem ...

A solar photovoltaic project in northern China's Hebei province has angered local farmers who accuse developers of forcibly grabbing their farmland, highlighting the conflict between companies pushing the country's ...

Solar steam generation with subsequent steam recondensation has been regarded as one of the most promising techniques to utilize the abundant solar energy and sea water or other ...

Solar steam generation is an emerging strategy for water desalination using renewable solar energy and seawater resources. In order to convert solar energy into heat for ...

Flexible perovskite solar cells (FPSCs) with excellent recoverability show a wide range of potential applications in portable power sources. The recoverability of FPSCs requires outstanding bendability of each ...

The power stored in a solar generator's battery is in direct current (DC), but most devices and appliances use alternating current (AC). This inverter converts DC to AC. If ...

Nevertheless, it is still rare for synergistic freshwater production or clean fuel generation by solar

photothermal phenomenon, so as to effectively harvest and utilize whole ...

How long will a solar generator power a refrigerator? With a solar generator with a high enough capacity, you can definitely power larger devices like refrigerators. Refrigerators ...

where η_{ss} is the overall solar-to-steam conversion efficiencies, Δm is the mass loss of water during irradiation, ΔH_{vap} is the phase change enthalpy of water from liquid to ...

The momentum and energy multiband alignments promoted by Pb alloying resulted in an ultrahigh power factor of $\sim 75 \mu\text{W cm}^{-1} \text{K}^{-2}$ at 300 K, and an average figure of merit ZT of ~ 1.90 . We found that a 31-pair thermoelectric ...

This paper proposes a model called X-LSTM-EO, which integrates explainable artificial intelligence (XAI), long short-term memory (LSTM), and equilibrium optimizer (EO) to ...

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