

This solar desalination has generally three steps; conversion of solar energy to heat, vaporization of seawater by the heat and condensation of water vapor to form freshwater. We have ...

In this review article, both the benefits and drawbacks of desalinating water throughout the world using solar energy are analysed and a comprehensive overview of solar desalination ...

By leveraging membrane interface engineering, the innovative design integrates solar evaporation, vapor transportation, and vapor splitting within a single membrane. Unlike conventional ...

In this study, a solar-heated submerged vacuum membrane distillation (S-VMD) system that uses an evacuated tube collector as the feed container is proposed. Indoor tests under steady ...

2.2. Solar Evaporation Performance of the Photothermal Membrane Fix the photothermal membrane on polystyrene foam, and the uncarbonized part is immersed in water, working as a water supply ...

Here the authors develop a membrane-distillation device that exploits sunlight and the heat dissipated by an integrated solar cell unit, enabling simultaneous efficient production of ...

Herein, we developed a spontaneous and sustainable solar-driven evaporation process based on a photothermal membrane for the concentration and recovery of sucrose solution. The photothermal ...

Solar steam water purification and fog collection are two independent processes that could enable abundant fresh water generation. Here, the authors develop a hydrogel membrane that ...

Abstract Solar energy is used worldwide for generating electricity or desalting seawater. Photothermal membrane distillation (PMD), an emerging thermal-driven process for seawater desalination, ...

o The photothermal membrane has excellent light absorption and covers the entire solar spectrum. o The photothermal membrane has higher solar-thermal efficiency and heat ...

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Harvesting solar energy for water desalination is considered as one of the most important technologies to effectively address global water scarcity. Recently, it was found that water ...

Herein, we report a ceramic-carbon Janus membrane with solar-thermal functionality for enhanced

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desalination performance, energy efficiency, and stability for hypersaline water treatment.

The current research developed a composite membrane with dual functionality, exhibiting strong resistance to salt and biofouling, in order to facilitate collaborative solar-driven ...

To the best of the authors' knowledge, this elegant combination of an evacuated tube solar collector and a membrane distillation unit represents an innovative approach which couples two ...

There are various desalination technologies that can provide sufficient and sustainable water sources. Renewable energy-based desalination technologies like solar-based interfacial ...



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