Solar energy to generate electricity from water evaporation

In recent years, people have been committed to obtaining clean water and electric energy through solar interface evaporation, a common phenomenon in nature.

It has been reported that an emerging evaporation-induced hydrovoltaic effect can directly convert evaporation energy into electricity through the interaction of water with functional materials, ...

In southern Germany, a turquoise gravel lake has quietly become a power plant. Instead of building a classic solar farm on fields or rooftops, engineers have covered part of the water with long ...

In this work, a porous polyvinyl alcohol (PVA) hydrogel in combination with a thermoelectric generator (TEG) is devised to directly capture energy from water evaporation.

We find that natural evaporation from open water surfaces could provide power densities comparable to current wind and solar technologies while cutting evaporative water losses by nearly half. We ...

One emerging solution is floating solar technology, which provides energy while simultaneously reducing water loss.

Solar-powered water evaporation technology is emerging as a sustainable method for generating clean water directly from untreated sources. The materials used in this process must ...

Herein, we developed a hybrid hydrovoltaic generator driven by natural water evaporation, integrating an "evaporation motor" with an evaporation-electricity device and a droplet-electricity device.

This review focuses on the water evaporation-induced electricity generation (WEG), a promising renewable energy technology that harvests energy through interfacial interactions during ...

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In this study, we harness the enthalpy of water evaporation to generate electricity directly using thermoelectric generators (TEGs), with only a few reports in the literature.

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