

What is solar-driven steam generation?

Solar-driven steam generation (SSG) combines solar energy and water, two of Earth's most abundant yet essential resources, and has garnered widespread attention. Over the past decade, substantial advancements have been made in improving both solar-to-steam conversion efficiency and long-term stability.

Can solar-driven steam generation be used beyond water purification & desalination?

This Review summarizes the recent progress in solar-driven steam generation in diverse functionalizations and highlights its applications beyond water purification and desalination.

Are solar steam devices a good option for clean water generation?

Solar steam devices offer the possibility of efficient clean water generation because of the advantages of low energy consumption, scalability, and environmental friendliness. In recent years, as research has intensified, higher demands have been placed on the photothermal conversion rate of the devices.

How can solar-driven interfacial steam generators improve efficiency?

In recent years, as research has intensified, higher demands have been placed on the photothermal conversion rate of the devices. Improving the efficiency of solar-driven interfacial steam generators is based on three main aspects: optimizing light absorption, regulating water transport, and suppressing heat loss.

The global shortage of freshwater supply has become an imminent problem. The high energy consumption of traditional desalination technology cannot meet the demand for sustainable ...

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A low cost, highly flexible and environmentally friendly water generation method known as interfacial solar steam generation (SSG) has recently been popularized by many researchers due to ...

Recently, steam generation systems based on solar-thermal conversion have received much interest, and this may be due to the widespread use of solar energy and water sources such as ...

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In addition, the proposed ASE exhibited excellent water purification for high salinity saline water, colored wastewater, and heavy metal wastewater. This work provides new insights into ...

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# Solar water heating drives steam generation

Li et al. describe the mixed temperature gradient of solar steam generators enabled by solar heating and evaporative cooling. This evaporator demonstrates 5.62 and 2.77 kg m<sup>-2</sup> h<sup>-1</sup> ...

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