

In this Review we first trace milestones in the development of SSG and explore its conceptual functionalization, which is driving recent innovative strides in water and energy ...

The main goal of the present research is to design and examine the combined cycle motivated by solar energy for multigeneration which is power, hydrogen, ammonia, and freshwater...

This review investigated the production of power, freshwater, and hydrogen from multigeneration systems powered by solar energy. Furthermore, the hybridization of different ...

Solar thermal water splitting (STWS) produces renewable (or green) hydrogen from water using concentrated sunlight.

This study introduces a novel transcritical CO₂ pumpless Rankine power generation cycle based on the thermal compression concept, utilizing low-temperature renewable sources. The ...

Results confirm that the proposed solar-driven system offers an efficient, low-carbon pathway for simultaneous renewable electricity generation, hydrogen production, and sustainable ...

This study introduces a novel solar-powered concentrating photovoltaic-thermal power generator-solid oxide electrolysis cell system designed to enhance hydrogen production efficiency by ...

The results show that, with a total solar heat input of 250 kW, the system can generate 21.46 kW of electricity, 71.02 kW of refrigeration, and 100.65 g per second of distilled water.

Herein, we present a groundbreaking integration concept that combines a floating solar panel with a five-stage membrane distillation (MD) device, enabling simultaneous clean water and ...

To improve the Colombian energy matrix and capacity using innovative solar power generation methods, Moreno-Gamboa et al. (2020) investigated the performance of a combined ...



Solar water cycle power generation

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