Photothermal energy storage power generation system

In this review, the different designs of solar thermoelectric generators are examined within the context of thermoelectric elements, optical concentrators, solar absorbers, and other techniques...

The sun radiates a large amount of energy to the earth, yet most of which is wasted. Efficient utilization of solar energy can be achieved by integrating a solar absorber, phase change material, and ...

In this study, we propose an all-day solar power generator to achieve highly efficient and continuous electricity generation by harnessing the synergistic effects of photoelectric-thermoelectric ...

The present invention provides an energy storage type high-temperature photovoltaic and photothermal integrated power generation system and method.

This work maximizes the utilization of ambient energy resources to provide an environmentally friendly and uninterrupted power generation strategy. This opens up new possibilities for sustained power ...

Benefiting from the dual solar inputs and efficient heat utilization, the system demonstrates outstanding performance metrics including an evaporation rate of 3.68 kg m -2 h -1, a solar-to-vapor ...

Here, a novel integrated solar to hydrogen-electricity and thermal storage system (STHET) is proposed to solve above problems. STHET consists of a photothermal catalytic system and a thermoelectric ...

These materials, utilizing various photothermal conversion carriers, can passively store energy and respond to changes in light exposure, thereby enhancing the efficiency of energy systems.

At present, the solar photovoltaic power generation system can improve the output characteristics by adding heat storage units or by supplementary combustion or combined with conventional thermal power, ...

Mu et al. designed a co-generation system based on a thermoelectric generator with a starch-polyacrylamide hydrogel. The hydrogel on the cold side of the thermoelectric generator uses the ...

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