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What is more, two self-generation power devices are designed, and the power generation of the reverse structure demo device (r-TEG) is 130% of the forward one (f-TEG) in the daytime and 260% ...

Flexible perovskite solar cells (FPSCs) with excellent recoverability show a wide range of potential applications in portable power sources. The recoverability of FPSCs requires outstanding bendability of each ...

DOI: 10.1039/C7EE01804E Corpus ID: 103766974; Solar-driven simultaneous steam production and electricity generation from salinity @article{Yang2017SolardrivenSS, title={Solar-driven simultaneous steam production and electricity generation from salinity}, author={Peihua Yang and Kang Liu and Qianchang Chen and Jia Hui Li and Jiangjiang Duan ...

Semantic Scholar extracted view of "100 kWe power generation pilot plant with a solar thermochemical process: design, modeling, construction, and testing" by Taixiu Liu et al. ... design, modeling, construction, and testing}, author={Taixiu Liu and Zhang Bai and Zheng Zhimei and Qibin Liu and Jing Lei and Jun Sui and Hongguang Jin}, journal ...

2 ???· Xuebo Liu. Kansas State University. Abstract. Despite the prevalence of large-scale solar power generation studies across the globe, relatively little is known about the long-term ...

The main conclusions are summarized as follows: (1) A 100 kWe solar generation pilot plant is designed and constructed, including solar thermochemistry, power generation, preheating and storage unit, etc. The successful operation of the solar power generation pilot with solar thermochemical conversion and power generation processes is achieved.

Many studies on solar-driven power generation have been conducted, including experimental studies of the solar-driven steam Rankine cycle expander with parabolic trough collectors (PTCs) [4], integrated research on a solar power system based Rankine cycle using thermal oil and molten salt as heat transfer fluids [5], thermodynamic analysis of a solar-driven ...

Solar-enabled steam generation has attracted increasing interests in recent years for its potential applications in power generation, desalination and wastewater treatment etc. Latest researches ...

Author links open overlay panel Taixiu Liu a b, Zhang Bai c, Zhimei Zheng a b, Qibin Liu a b, Jing Lei d, Jun Sui a b, Hongguang Jin a b. Show more. Add to Mendeley. Share. ... [25]. A solar power generation system employing mid-and-low temperature solar thermochemistry was proposed, and the thermal-economic performance was investigated through ...

Probabilistic forecasting of solar photovoltaic (PV) generation is critical for stochastic or robust optimisation-based power system dispatch. This study proposes a randomised learning-based hybrid e...

for solar power generation has attracted a lot of attention from stakeholders such as power plants, power companies, equipment manufacturers and investors.This thesis addresses photovoltaic power generation systems, summarizes the main technology types and current status of photovoltaic and solar thermal power generation, analyzes

A new forecasting framework is presented to address the problem that the input data is missing or incomplete due to measurement and recording errors, which makes the application of a machine learning-based PV forecasting model difficult or impossible. For practical PV generation forecasting, it is sometimes the case that the input data is missing or ...

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DOI: 10.1039/c9ta12211g Corpus ID: 213915904; Solar evaporation for simultaneous steam and power generation @article{Liu2020SolarEF, title={Solar evaporation for simultaneous steam and power generation}, author={Guohua Liu and Ting Chen and Jinliang Xu and Gang Li and Kaiying Wang}, journal={Journal of Materials Chemistry}, year={2020}, volume={8}, pages={513-531}, ...

Probabilistic forecasting of solar photovoltaic (PV) generation is critical for stochastic or robust optimisation-based power system dispatch. ... IET Renewable Power Generation; IET Science, Measurement & Technology; IET Signal Processing; IET Smart Cities ... and winter (June 2017). Fig. 4. Open in figure viewer PowerPoint. Normalised PV ...

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Jun Liu College of Automation, Xi"an University of Technology, No. 5 Jinhua South Road, Xi"an, China ... such as wind and solar energy. Year after year, the percentage of new energy in power system power ...

The engineering design, construction and testing of a 100 kWe solar-hybrid power generation pilot plant are conducted in this work. In the pilot plant, solar energy is upgraded to chemical energy ...

A high figure of merit (ZT) of 1.2-1.4 at 550 K was achieved, along with experimental demonstration of a record high conversion efficiency of ~8.5% under a cold- and hot-side temperature difference of 225 K, which holds the realistic prospect for power generation. In this review, we summarize the recent progress in both material-level understanding and device ...

Harvesting energy from the environment offers the promise of clean power for self-sustained systems1,2. Known technologies--such as solar cells, thermoelectric devices and mechanical generators ...

Due to the intermittency and randomness of solar photovoltaic (PV) power, it is difficult for system operators to dispatch PV power stations. ... Jun Liu; Energy management system (EMS) is able to ...

Liu Liu Jun-Hua Zhao Liang Ma Peng Zhang. Engineering, Environmental Science. ... Accurate solar power generation forecasting can help to advance mutual power assistance in the renewable energy sector and enhance optimal dispatch. However, a number of factors make solar power ...

Solar power generation is a sustainable and clean source of energy that has gained significant attention in recent years due to its potential to reduce greenhouse gas emissions and mitigate ...

Jun Liu; Jun Liu. University at ... Selective solar absorbers with high performance are the key to concentrated solar power systems. Optical metamaterials are emerging as a promising strategy to ...

DOI: 10.1016/J.NANOEN.2021.106112 Corpus ID: 235525304; Self-regulating and asymmetric evaporator for efficient solar water-electricity generation @article{Liu2021SelfregulatingAA, title={Self-regulating and asymmetric evaporator for efficient solar water-electricity generation}, author={Jing Liu and Jixiang Gui and Weiting Zhou and Xin-long Tian and Zhong Xin Liu and ...

Organic molecule (DCN-4CQA) with the absorbance region at 300-800 nm and photothermal conversion efficiency of 18.2 % under one sun was employed for fabricating flexible photothermal evaporators for solar steam and thermoelectric power generation.

a) Schematic of the proof-of-concept device combining solar-driven interfacial evaporation with TGC and RED. b) Comparison of evaporation rate and electricity power density values for various ...

In order to pursue superior cycle efficiency and lower power generation cost for the CSP plants, two S-CO2-Brayton-cycle-based power cycles with different utilization methods of the residual ...

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