

Principal Investigator: Jifeng Song | Solar concentration and daylighting technology | ResearchGate, the professional network for scientists

The analyses of solar power plants have been carried out to estimate the environmental benefits; the results showed that a 1-MWe stand-alone line-focusing concentrating solar power plant can save ...

TONG Kai, 1, YANG Lijun, 1, SONG Jifeng 2, DU Xiaoze 1, YANG Yongping 1. : ... factor that influence the power generation capacity and the photon-electric conversion efficiency of the concentrated solar thermal power station. In this paper, the recent key technologies of improving the optical-thermal conversion performance of the ...

The use of mirrors and Concentrated Solar Power (CSP) allows us to harness the energy for our own use. In 2032, the development of CSP is predicted to increase by 34%.

Solar thermal power plants are electricity generation plants that utilize energy from the Sun to heat a fluid to a high temperature. This fluid then transfers its heat to water, which then becomes superheated steam. This steam is then used to ...

DOI: 10.1016/J.ENCONMAN.2018.11.080 Corpus ID: 104301703; Performance analysis of a wind-solar hybrid power generation system @article{Ding2019PerformanceAO, title={Performance analysis of a wind-solar hybrid power generation system}, author={Zeyu Ding and Hongjuan Hou and Gang Yu and Eric Hu and Liqiang Duan and Jin Zhao}, journal={Energy Conversion and ...

Downloadable (with restrictions)! It is important to calculate and evaluate the spillover of flux reflected by heliostats on the heat shields for the construction, operation and optimization of solar thermal power tower plant. By establishing a concentrated flux distribution model of power tower plant based on the real sunshape and taking haze, optical error, shadowing and blocking effect ...

The major challenge for reducing the minimum power output of the CHP plant under a certain thermal demand is the strong linkage between the heat and power outputs [4]. To decouple the linkage between heat and power outputs of CHP plants, various heat-power decoupling technologies, representing by electric heat technology and energy storage ...

The PS10 solar thermal power station. This is a list of the largest facilities generating electricity through the use of solar thermal power, specifically concentrated solar power. Operational. This section needs to be updated. Please help update this article to reflect recent events or newly available information.

Solar-aided coal-fired power generation (SACPG) technology is an effective method of solar energy utilization. It could balance the demand of carbon dioxide emission ...

High flux solar simulators have been widely used in solar thermal research due to their controllable flux intensity. Simulators based on optical-fiber transmission have recently gained...

Kai TONG 1 (),Lijun YANG 1 (),Jifeng SONG 2,Xiaoze DU 1,Yongping YANG 1 1 School of Energy, Power and Mechanical Engineering, North China Electric Power University, ... factor that influence the power generation capacity and the photon-electric conversion efficiency of the concentrated solar thermal power station. In this paper, the recent key ...

In this study, a 600 MWe coal-fired power station and solar energy are combined into a solar-aided coal-fired power generation (SACPG) system. Five SACPG systems are ...

DOI: 10.1016/j.enconman.2021.115113 Corpus ID: 245062049; Performance study of solar tower aided supercritical CO₂ coal-fired power generation system with different schemes @article{Tong2022PerformanceSO, title={Performance study of solar tower aided supercritical CO₂ coal-fired power generation system with different schemes}, author={Yong Tong and ...

Plasma Vacuum-Arc Treatment Technology for the Metal Pipe Surfaces of Solar Thermal Power Plants. V. N. Arustamov; M. V. Kremkov; ... Assessment of the Technical Potential of PV Stations on the Example of the Fergana Valley. Part II: Analysis of Sunny, Partly Cloudy and Cloudy Days ... Song Jifeng; SOLAR ENERGY CONCENTRATORS 26 July 2024 Pages ...

Performance Analysis of Tower Solar Aided Coal-Fired Power Plant with Thermal Energy Storage ... Jifeng Song; In this paper, a novel tower solar aided coal-fired power generation (TSACPG) system ...

At the early stages of STPP deployment, the research was focused on improving the solar field performance (Montes et al., 2009) spite of keeping a conservative power block configuration, some optimization studies were carried out, for example, the optimal number of extractions or the influence of different cooling options in the condenser (Blanco ...

Solar and biomass are both renewable energy resources. Using biomass as fuel is becoming more and more attractive after governments increase the tariff for the electricity from the renewable sources. However the costs of power from a biomass power generation plant depend greatly on the availability and quality of the biomass resource. The commercialization ...

Downloadable (with restrictions)! In this paper, a novel tower solar aided coal-fired power generation (TSACPG) system with double reheat ultra-supercritical boiler is proposed. Part of the steam at the primary reheater inlet of the boiler is heated by tower solar collector and returned to the primary reheater according to the principle of energy grade matching.

The Space Solar Power Station (SSPS) is a large spacecraft that utilizes solar power in space to supply power to an electric grid on Earth. A large symmetrical integrated concept has been proposed by the China Academy of Space Technology (CAST). Considering its large scale, the SSPS requires a modular design and unitized general interfaces that would be ...

CESA-I solar thermal power tower plant in Spain is selected for verification, with latitude and longitude of 37°5'30" N and 2°21'30" W. The layout of the heliostat field in CESA-I is shown in Fig. 15. ...
Jifeng Song: Conceptualization, ...

DOI: 10.1016/j.applthermaleng.2022.118885 Corpus ID: 249857401; Collaborative optimization of thermal and economic performances of a tower solar aided coal-fired power generation system

North China Electric Power University - Cited by 541 - solar ... Jifeng Song. North China Electric Power University. Verified email at ncepu .cn. ... Thermal performance study of tower solar aided double reheat coal-fired power generation system. Y Jiang, L Duan, L Pang, J Song. Energy 230, 120857, 2021. 17:

DOI: 10.1016/j.energy.2019.116074 Corpus ID: 203139957; Heat-power decoupling technologies for coal-fired CHP plants: Operation flexibility and thermodynamic performance
@article{Liu2019HeatpowerDT, title={Heat-power decoupling technologies for coal-fired CHP plants: Operation flexibility and thermodynamic performance}, author={Ming Liu and Shan-You ...

Wu et al. [27] proposed a solar contribution allocation method to determine the solar power and heat output in the solar aided CHP plant. According to five criteria, Huang et al. [28] evaluated the energy and economic benefits of the solar aided power generation system with different capacities.

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