

عنوان مقاله:

Design and Development of Cylindrical Parabolic Collector for Hot Water Generation

محل انتشار:

فصلنامه انرژی و محیط زیست ایران، دوره 7، شماره 1 (سال: 1394)

تعداد صفحات اصل مقاله: 6

نویسندگان:

Kulkarni Hrushikesh Bhujangrao - School of Mechanical and Building Sciences, VIT University, Vellore-632014 (TN)
India

Pankaj B Tambe - School of Mechanical and Building Sciences, VIT University, Vellore-632014 (TN) India

خلاصه مقاله:

Today's India is in need of generating power at higher rate to maintain adequate supply of electricity to users for development and growth of Nation. Non renewable energy sources like coal and petroleum products are the major sources utilized for power production. Use of conventional energy sources causing climate global warming. To reduce the gap between demand and supply of energy and maintain sustainable development, renewable energy sources need to be considered as an alternative source of energy. The solar energy has been identified as one of the promising energy source which can be used directly or indirectly for generation of electricity, hot water and power. A prototype of cylindrical parabolic collector (CPC) is designed and developed to utilize solar energy for hot water generation. Prototype of CPC is tested from 10AM to 4PM in the month of May and thermal performance is evaluated based on solar standards available through literature. Hot water at 60°C is produced throughout a day by varying mass flow rate of water. The instantaneous efficiency is calculated after every half an hour and found to be 69% and overall efficiency of system is 71%. This prototype CPC system can deliver hot water at required temperature to meet industrial, domestic demands and saves electricity.

کلمات کلیدی:

Electric power grid, Genetic algorithm, Hybrid energy system, Reliability, Wind power

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/487717>

