

عنوان مقاله:

Energy and Exergy Analysis of Air PV/T Collector of Forced Convection with and without Glass Cover

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خلاصه مقاله:

In this study, the overall performance of air PV/T, based on energy and exergy analysis has been investigated. Two combinations of air PV/T, which consist of unglazed and glazed air PV/T, are considered. Thermal analysis and numerical calculations were carried out, and the performance parameters of the system for the climate conditions of Kerman were studied. The results are presented in graphs and some parameters such as electrical, thermal and overall energy and exergy efficiencies of these two combinations, have been compared. The results show higher thermal and overall energy efficiencies of glazed PV/T, whereas, higher electrical and overall exergy efficiencies of unglazed one were observed. The overall energy efficiency of glazed and unglazed systems are about 66% and 52%, respectively. Also, the overall exergy efficiency for unglazed and glazed systems is between 11.2- 11.6% and 10.5- 11.1% respectively.

کلمات کلیدی:

Air PV/T Collector, Energy Efficiency, Exergy Efficiency

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