

عنوان مقاله:

Performance Comparison between FPC and ETC for a Solar Absorption Chiller: A Case Study

محل انتشار:

دومین همایش بین المللی ایده های نوین در معماری شهرسازی جغرافیا و محیط زیست پایدار (سال: 1396)

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خلاصه مقاله:

Typical solar absorption chillers suffer from their low performance and it is very important to design an optimum device. Numerical simulation can assist engineers to enhance the performance of a solar absorption chiller. In this study, we have compared flat-plate collector (FPC) with evacuated tube collector (ETC) for a solar absorption chiller. The results show that there is acceptable agreement between the result of numerical simulation and experimental data or Theoretical analysis reported in the literature. Numerical simulation indicates that ETC has more annual solar fraction than FPC and for chillers with high generator temperature, ETC is a better option. The results also imply that 11.7m² of evacuated tube solar collector are required to produce 1 t of refrigeration (3.51 kW_e and 16.86m² of flat-plate collector are required to produce 1 t of refrigeration (3.51 kW_e).

کلمات کلیدی:

Numerical simulation; Solar absorption chiller; FPC; ETC

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