

## عنوان مقاله:

An experimental investigation on the performance of a symmetric conical solar collector using SiO<sub>2</sub>/water nanofluid

## محل انتشار:

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## خلاصه مقاله:

One of the effective methods to improve the thermal efficiency of solar collectors is using nanofluids as the coolant. The present study experimentally investigated the effect of SiO<sub>2</sub>/water nanofluid with ۱% mass fraction on the performance of a symmetric collector, i.e. conical solar collector. The conical solar collector with ۱ m<sup>2</sup> area and normal to the earth was tested in Ahvaz, a city in the southwest of Iran. The experiments performed under ASHRAE standard without any surfactants based on the solar radiation, mass flow rate, and temperatures variation. Results demonstrated that the thermal efficiency and the temperature performance can be enhanced through SiO<sub>2</sub>/water nanofluid in comparison with pure water. The maximum efficiency and outlet-inlet difference temperature of conical collector using nanofluid was about ۶۲% and ۶.۸ °C respectively. Moreover, the collector behaviors are more efficient .with the nanofluid than with pure water in the higher values of the flow rate and sun radiation

## کلمات کلیدی:

Conical solar collector, SiO<sub>2</sub>/water nanofluid, Solar radiation, Flow rate, efficiency

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1487287>

