

## Documents

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**A review of solar energy collectors: Models and applications**

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**Abstract**

A current study and discussion in detail about many solar energy collectors of various types, components, classifications and configurations, through the analysis of their performance, is our aim through this review paper. The effects of the geometrical parameters of the solar air collectors as well as the functioning parameters on heat transfer and fluid flow processes were also discussed in detail. The numerical, analytical, and experimental analyses on different models of flat plate solar air collectors with various thermal transfer enhancement strategies were shown in various stages, i.e., modelling, control, measurement, and visualization of airfield, determination of heat transfer, control of friction loss and pressure drop, and evaluation of the thermal performance by the measurement of the augmentation in the temperature of the working fluid at a given solar irradiance and under given flow rate. We concluded this review by identifying the various applications possible for the solar air collectors such as heating and cooling of houses, drying agricultural food materials, and water desalination process. © 2018 Shahid Chamran University of Ahvaz.

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