



Experimental validation of thermal model of hybrid photovoltaic thermal (HPVT) double slope active solar still

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ABSTRACT

A HPVT double slope active solar still was designed and fabricated to study their performance. In this paper thermal modeling of HPVT double slope active solar still with two flat plate collectors connected to the basin of solar still has been carried out. Analytical expressions for yield, water temperature and condensing cover temperature have been derived as a function of climatic and design parameters on the basis of energy balance equations. The thermal model of distillation system has been validated with experimental data. It has been established that there are close agreement between theoretical and experimental results with coefficient of correlation varying from 0.872 to 0.965.

Keywords: Solar distillation; Thermal modeling; Heat and mass transfer

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