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COMPARATIVE EVALUATION OF THREE SYMMETRICAL SINGLE SLOPE SOLAR STILLS WITH A SHADING COVER COUPLED WITH EVACUATED GLASS TUBES

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ABSTRACT

In this study, a single slope solar still with a shading cover connected to a solar heating system of evacuated tube heat pipes has been investigated experimentally. Three identical models of this solar distilled have been designed and constructed from the same materials for comparing and studying the effect of the climatic conditions (solar radiation intensity, ambient temperature and wind velocity) and the depth of slain water at the bottom of the solar still on its performance and productivity. The results revealed that the productivity and the average thermal efficiency of the solar still decrease with water depth, and they increase by 24 % and 11 % respectively when the average solar radiation intensity increases from 410Wm^{-2} to 501 Wm^{-2}.

KEYWORDS: Desalination, Productivity, Solar Still, Saline Water, Thermal Performance