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DEVELOPMENT AND EVALUATION SOLAR STILL INTEGRATED WITH EVACUATED TUBES

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ABSTRACT

This paper presents design and performance analysis of solar still integrated with evacuated tube collector in natural mode. Performance has been predicted theoretically in terms of water and inner glass cover temperatures, energy, exergy efficiencies and yield during typical summer days. The maximum daily energy and exergy efficiency was found to be 34.39 and 4.04 % during the sunshine hours for 3cm water depth, which decreases with increase in depth. However, the optimum performance has been found for basin water depth of 3 cm with distillate yield of about 8 liter. Hence integration of 10 evacuated tubes to the solar still with depth of 3 cm gives maximum daily yield.

KEYWORDS: Evacuated Tube Collector, Solar Still, Energy Efficiency, Exergy Efficiency