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Exergy analysis of double slope active solar still under forced circulation mode

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ABSTRACT

Potable water is a basic necessity for human being along with food and air. Direct uses of water from sources like rivers, lakes, sea, and underground water reservoirs are not always advisable because of the presence of higher amount of salt and contamination. Solar still is a simple device which can convert available waste or brackish water into potable water using solar energy. Clean water is evaporated from the brackish water and condensed on the glass cover, which is drained out for use. In this paper, thermal efficiency and exergy analysis are carried out for evaluating the thermal performance of double slope active solar still under forced circulation mode. The daily thermal efficiency of solar still varies from 13.55 to 31.07% and the exergy efficiency varies from 0.26 to 1.34%.

Keywords: Solar distillation; Exergy analysis; Thermal efficiency

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