

Comparative Study of Experimental and Theoretical Convective, Evaporative for Two Model Distiller

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Abstract : The purification of brackish seawater becomes a necessity and not a choice against demographic and industrial growth especially in third world countries. Two models can be used in this work: simple solar still and simple solar still coupled with a heat pump. In this research, the productivity of water by Simple Solar Distiller (SSD) and Simple Solar Distiller Hybrid Heat Pump (SSDHP) was determined by the orientation, the use of heat pump, the simple or double glass cover. The productivity can exceed 1.2 L/m²h for the SSDHP and 0.5 L/m²h for SSD model. The result of the global efficiency is determined for two models SSD and SSDHP give respectively 30%, 50%. The internal efficiency attained 35% for SSD and 60% of the SSDHP models. Convective heat coefficient can be determined by attained 2.5 W/m²°C and 0.5 W/m²°C respectively for SSDHP and SSD models.

Keywords : productivity, efficiency, convective heat coefficient, SSD model, SSDHPmodel

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