

**COMPARATIVE STUDY OF A PREHEATING AND NON-PREHEATING SOLAR-STILL
PRODUCTION**

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Abstract

Over 70 of the planetary surface are covered by water and from which 97.5% is salted water and thus is improper for human, in industrial and agriculture use. Soft water represents only, 2% of existing water. Solar desalination may be considered as an alternative to the drinking water production, which seems interesting for some areas of the planet, but represent disadvantage in terms of daily production which is still low.

The efficiency of solar still depends on the temperature gradient existing between the water temperature in the basin (Evaporation surface) and the glass cover (Condensation surface), in our case we have chosen a solar collector as a pre-heating system in order to increase the temperature of the basin water.

The obtained results highlight the effect of the performance parameters such as the water thickness , the ambient temperature, the inclination angle as well as the effect of pre-heating system (thermal solar collector) en the system performance (distiller production). In this optic we carry out a comparison, in terms of production; between pre-heating and non-pre-heating solar stills.

Keywords: solar desalination; solar collector; solar still; Performance;