

Modeling of temperature for Simple Solar Distiller Hybrid with Heat Pump (SSDHP)

Hidouri Khaoula and Chouachi Bechir

National Engineering School of Gabes, Tunisia

Finding solutions for the purification of sea water today admits a major necessity in all countries, especially the third world. The considerable increase in the population growth of all types of industry is thought to find high quality technology to produce drinking water. Two models can be used in this work: Simple solar still (SSD) and simple solar still coupled with heat pump. In this research, the productivity of water by SSD and 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 which is 30% and 50% respectively for SSD and SSDHP. The internal efficiency attained is 35% for SSD and 60% for SSDHP. Convective heat coefficient can be determined, which is attained at 2.5 W/m²°C and 0.5 W/m²°C respectively for SSDHP and SSD models.

hidourik@yahoo.fr

Notes: