

STUDY THE EFFECT OF PHOTOCATALYST IN THE DESALINATION OF SEA WATER BY SOLAR ENERGY

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ABSTRACT

An experimental investigation was carried out with a single slope solar still for the production of potable water from raw seawater with and without the presence of photocatalyst with an aim to create a model for effective utilization of abundant solar energy available in Oman. The solar still was fabricated with locally available material with basin area 0.4056 m^2 and glass cover inclination 25° . The temperature of glass cover, sea water inside the basin and basin surface were recorded and the quantity of production water was measured for each hour. Different parameters like pH, TDS, conductivity for raw water and production water were measured and compared. The productivity of the stills was improved by coating the basin with semi conducting oxides (Titanium oxide as a photo catalyst) and at lower water depth. Numerical modeling has been done and the experimental values are found in agreement with model equations.

KEY WORDS: Solar still, photo catalyst, productivity, modeling