

Experimental Study of a Solar Still with Four Glass Cover

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Abstract : Solar distillation is an effective and practical method for the production of drinking water in arid and semi-arid areas; however, this production is very limited. The aim of this work is to increase the latter by means of single slope solar still with four glass cover without augmenting volume and surface of a conventional solar still, using local materials and simple design. The equipment was tested under the climatic condition of Msila city (35°70' N, 4°54' E), Algeria. Performance of the use of four glass cover was studied, and exhaustive data were collected, analyzed, and presented. To show the effectiveness of the system, its performance was compared with that of the conventional solar still. The experimental study shows that the production of the proposed system achieves 5.3 l/m²/day and 5.8 l/m²/day respectively for the months of April and May, with an increase of 10% and 17% compared to the conventional solar still.

Keywords : drinking water, four glass cover, production, solar distillation

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