



Experimental validation of theoretical correlation for calculation of mass transfer in simple and hybrid solar stills

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ABSTRACT

The present study is based on the use of three correlation groups which are: the Lewis number, the Dunkle and the 'Kumar and Tiwari' correlations for evaluating mass transfer in two types of solar stills. Theoretical results are compared with those obtained experimentally for a Simple Solar Distiller and a Hybrid Simple Solar Distiller/Heat pump stills. Experimental results and those calculated by Lewis number correlation show good agreements. Theoretical results obtained using Dunkle and 'Kumar and Tiwari' correlations are not satisfactory with the experimental ones.

Keywords: Heat and mass transfer model; Simple solar distiller; Hybrid simple solar distiller; Heat pump

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