Desalination and Water Treatment
www.deswater.com
12 (2009) 305–312
January
1944-3994 / 1944-3986 © 2009 Desalination Publications. All rights reserved.
doi: 10.5004/dwt.2009.955

Increase of COP for an experimental heat transformer using a water purification system

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Received 10 February 2009; Accepted in revised form 1 October 2009

ABSTRACT

The experimental results of a water purification system of single effect evaporation integrated into a heat transformer of 700 W are presented, using lithium bromide water as solution. It is demonstrated that it is possible to increase efficiency of energy use with heat recycling of a water purification system. The typical coefficients of performance values were increased from 24.7% to 30.3%, obtaining a maximum of 684 mL/h of distilled water. The behavior of the coefficient of performance in function of the absorber temperatures before and after the purification process is showed. Experimental and simulated data with the water purification system integrated into a heat transformer are analyzed.

Keywords: Energy saving; Water purification; Heat transformer; Efficiency of energy use; Desalination

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