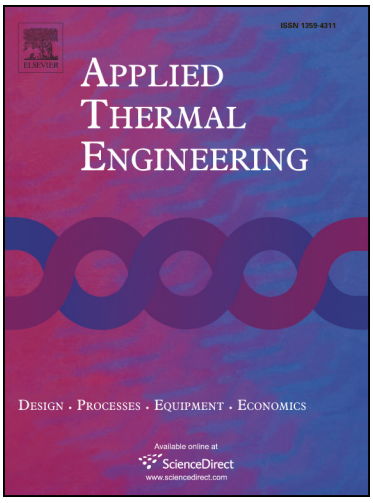

Research Paper

Weather effect on a solar powered hybrid adsorption desalination-cooling system: A Case Study of Egypt's Climate

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PII: S1359-4311(16)33763-2
DOI: http://dx.doi.org/10.1016/j.applthermaleng.2017.06.048
Reference: ATE 10567

To appear in: *Applied Thermal Engineering*

Received Date: 29 November 2016
Revised Date: 17 April 2017
Accepted Date: 11 June 2017

Please cite this article as: E.S. Ali, K. Harby, A.A. Askalany, M.R. Diab, A.S. Alsaman, Weather effect on a solar powered hybrid adsorption desalination-cooling system: A Case Study of Egypt's Climate, *Applied Thermal Engineering* (2017), doi: http://dx.doi.org/10.1016/j.applthermaleng.2017.06.048

Weather effect on a solar powered hybrid adsorption desalination-cooling system: A Case Study of Egypt's Climate

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Abstract

Effect of employing solar hybrid adsorption desalination-cooling system (ADCS) at the Egyptian weather has been investigated using TRNSYS software employing meteorological data of Assiut city at Egypt. A theoretical model of a semi continues hybrid ADCS employing silica gel-water has been used. Maximum specific daily water production (SDWP) is found to be about 10 m^3/ton of silica gel. Moreover, maximum coefficient of performance and specific cooling power of the system are about 0.5 and 134 W/kg respectively. The desalinated water product and cooling effect has been found to be increased with increasing the daily solar radiation. It has