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Ehab S. Ali, K. Harby, Ahmed A. Askalany, Mohamed Refaat Diab, Ahmed S. Alsaman

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

Ehab S. Ali^a, K. Harby^b, Ahmed A. Askalany^{c,*}, Mohamed Refaat Diab^b, Ahmed S. Alsaman^c

^aHolding Company for Water and Waste Water in Sohag, 82524, Egypt

^bDepartment of Mechanical Power Engineering and Energy, Faculty of Engineering, Minia University, Minia 61519, Egypt

^cDepartment of Mechanical Engineering, Faculty of Industrial Education, Sohag University, Sohag, 82524, Egypt

*Corresponding Author, Tel: +20862370572. Tel: +201028721274,

E-mail: ahmed_askalany3@yahoo.com

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 continuous hybrid ADCS employing silica gel-water has been used. Maximum specific daily water production (SDWP) is found to be about 10 m³/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

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