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Research Paper

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

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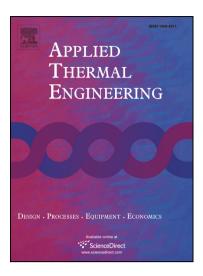
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## **ACCEPTED MANUSCRIPT**

# 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 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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