شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

MONA MAGHRABY

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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

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MONA MAGHRABY

SIMULATION AND ECONOMIC ASSESSMENT OF SOLAR DESALINATION BY AIR HUMIDIFACTION-DEHUMIDIFACTION

By

Esraa Khaled Mohamed Hefny

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
Chemical Engineering

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Title of Thesis:

Simulation and Economic Assessment of Solar Desalination by Air Humidifaction-Dehumidifaction

Key Words:

Solar Desalination; humidification-dehumidification; Aspen Plus simulation; Saline water; Parabolic line focus.

Summary:

This study mainly depends on solar desalination by humidification dehumidification method, this work divided into two parts: theoretical study and simulation study. Theoretical study depends on papers that already published in journals, and also climate of Egypt in both summer and winter case, the aim of studying climate is to know both suitable solar radiation and rate of evaporation and condensation, while simulation study depends on data from published paper, after doing mass and heat balance from simulation program, the parameters used are ratio between air to saline water, air temperature, recovery ratio, and specific energy consumption. Simple design of equipment is calculated, in order to know cost of fresh water, the maximum capacity of fresh water is 347 m^3/hr with cost 1.14 \$/m^3.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

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