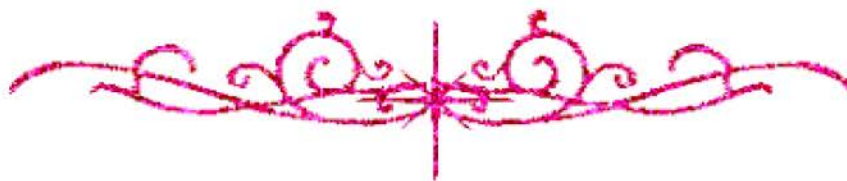


بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

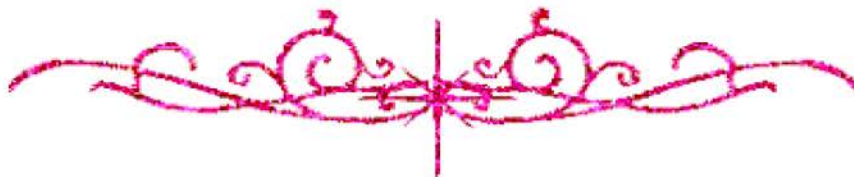
قسم

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



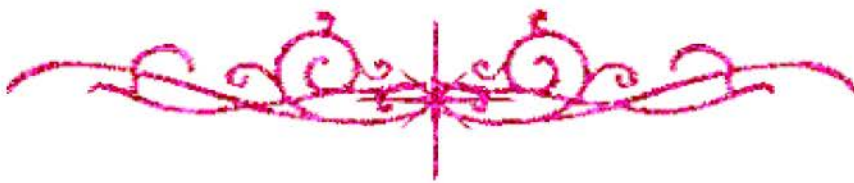
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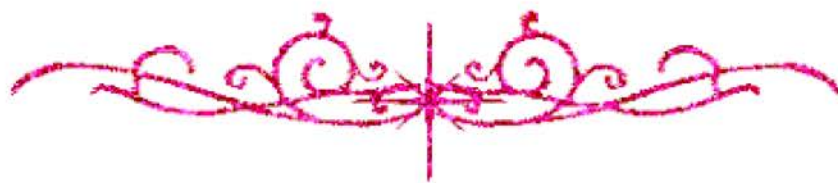


بعض الوثائق الأصلية تالفة





بالرسالة صفحات
لم ترد بالأصل





Cairo University

SEWAGE TREATMENT, SLUDGE DRYING AND PRODUCTION OF SUPERPHOSPHATE FERTILIZER USING MAGNESIUM SULFATE, PHOSPHATE ORE AND SULFURIC ACID

By

Bassant Ashraf Abd El Moniem Ahmed

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:

Sewage Treatment, Sludge Drying And Production Of Superphosphate Fertilizer Using Magnesium Sulfate, Phosphate Ore And Sulfuric Acid

Key Words:

Sewage Treatment; Sewage Drying; Single Superphosphate

Summary:

The present thesis work studies how we could produce single superphosphate fertilizer from sewage sludge, sulfuric acid and phosphate ore. In addition to that it also investigates the effect of phosphate ore, magnesium sulfate and sulfuric acid on wastewater characteristics and sludge dewaterability.

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.

Name:

Date:

Signature:

Dedication

This thesis is dedicated to all who are interested in environmental problems and how to turn wastes to valuable materials.

Acknowledgments

This work would have been impossible without the encouragement and effort of those who supported me throughout my thesis.

First of all I would like to thank my supervisors for their time, patience and knowledge that they offered from the beginning till the end of my work as well as the chemical engineering department with all its members. And secondly I am grateful for Abu-Rawash wastewater treatment plant employee for their kindness, support and allowing me to access their lab. Finally I would like to thank my family for always standing beside me.

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