Salwa Akl

بسم اللّه الرحمن الرحيم

مركز الشبكات وتكنولوجيا المعلومات

قسم التوثيق الإلكتروني

Salwa Akl

جامعة عين شمس

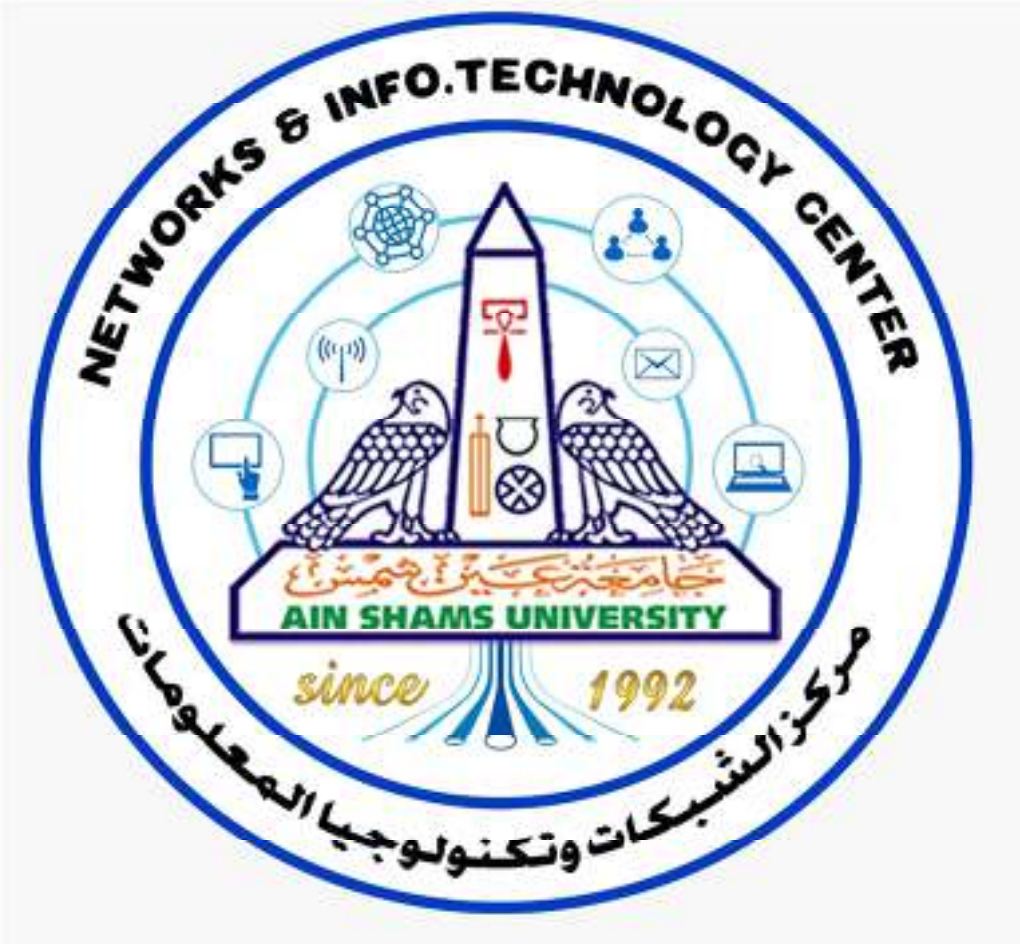
التوثيق الإلكتروني والميكروفيلم

قسم

نقسم باللّه العظيم أن المادة التي تم توثيقها وتسجيلها

علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

Salwa Akl



بعض الوثائق الأصلية تالفة
وبالرسالة صفحات لم ترد بالأصل

Utilization of Polymers Grafted onto Montmorillonite Interlayers in Chemical Reactions

A THESIS

Submitted in Partial Fulfillment for the Degree of Master of Science (Chemistry)

By

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B. Sc. (Chemsitry)

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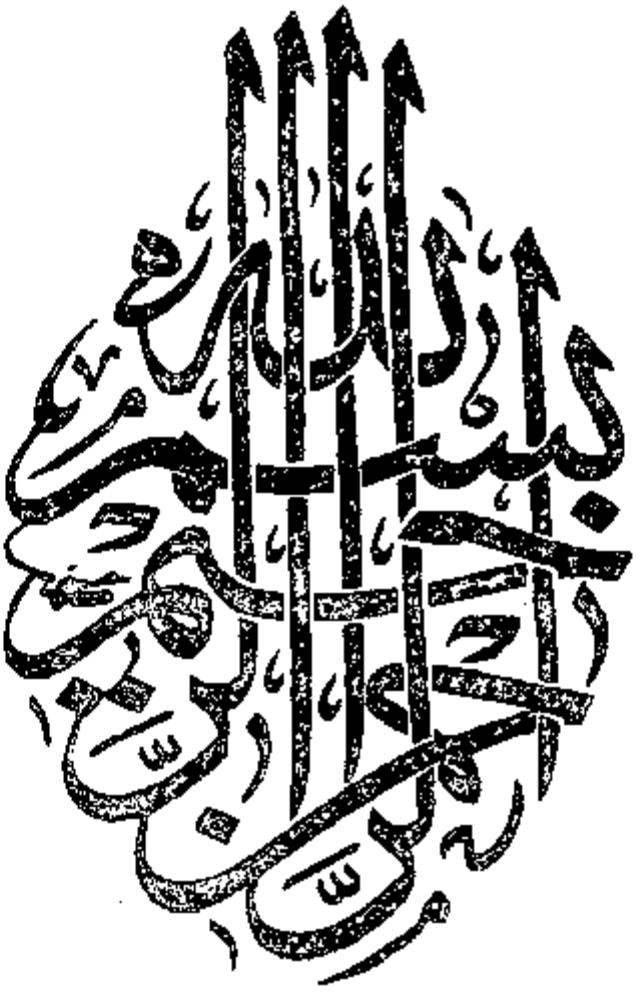

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To home it may concern

Beside the work carried out in this thesis, the candidate had post-graduate courses for one year in organic and physical chemistry covering the following topics:-

1- Reaction mechanism
2- Biochemistry
3- Organic Spectroscopy
4- Molecular Spectroscopy
5- Ion Exchange
6- Heterocyclic Chemistry
7- Electrochemistry
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9- Quantum Chemistry
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Acknowledgment

Praise be to Allah who hath guided us to this. Never could we have found guidance, had it not been for the guidance of Allah.

Great thanks are due to my **Prof. Dr. A. Akelah**, *Professor of Polymer Chemistry, Faculty of Science, Tanta University; for his meticulous supervision, moral support and encouragement. He did every effort in solving problems facing me during execution of the study and spared no time to offer his help up to the utmost.*

I wish to express my sincere thanks to **Prof. Dr. Mohamed A. El Borai**, *Professor of Organic Chemistry, Faculty of Science, Tanta University, for his help and encouragement. He spared no effort in solving the problems facing me during the conduction of the study.*

I am greatly indebted to **Dr. M. F. Abd El-Aal**, *Assistant Professors of Organic Chemistry, Faculty of Science, Tanta University, for his great help and valuable advices during initiation of this work.*

I am so grateful to **Dr. A. Rehab**, *Lecturer of Physical Chemistry, Faculty of Science, Tanta University, for his great help and valuable piece of advice during conduction of this study.*

I am so grateful to **Dr.E. R. Kenawy**, *Lecturer of Polymer Chemistry, Faculty of Science, Tanta University, for his great help and valuable piece of advice during conduction of this study.*

I am greatly indebted to all members and colleagues for creating the nice atmosphere during the laboratory work.

CONTENTS

SUMMARY

Summary

The present work is meant to be a part of ongoing studies on the preparation of polymer grafted onto MMT layers and the examination of the possibility of their application in various fields. The potential usefulness of these interesting materials has been subjected in present work for use as catalysts in the chemical reaction of nucleophilic substitutions. These noval polymeric organic-inorganic catalysts should exhibited the characteristic properties of the individual components through, including specific chemical interaction between the polymer and smectitic clay interlayer. Thus, the aim of this work was the preparation of potential useful materials which can provide the combination of the advantage of both organic and inorganic support. This combination of properties are necessary to be the useful range for most of the industrial chemical reactions.

The study of this work includes three main areas:-

1) preparation of polymer-clay catalysts.

polymer-clay catalysts have been prepared by grafting the polymer onto MMT interlayers through exchange of MMT cation with ammonium salt of polymers. Also, intercalation of ammonium salt of rubber onto MMT interlayer through exchange cation of MMT, then other polymers [choloromethylstyrene, hydroxyethylmethacrylate and oligo(oxyethelyne) monomethacrylate] were grafted on rubber.

2) characterization of polymer-clay materials.

Determination of the structural composition of the prepared polymer-clay materials has been studied by a wide variety of analytical techniques including elemental microanalysis, IR spectra and gravemetric analysis.

3) Application of polymer-clay materials in organic reactions:

The catalytic activities of polymers grafted onto MMT interlayers has been investigated in nucleophilic substitution of thiocynate, cynates and nitration in order to enhance and increase the efficiency of conventional chemical reactions. The effectiveness of these noval materials has been examined under the effect of several factors governing the rates of chosen chemical reaction, such as chemical composition of the polymer backbone, chemical nature of the active moiety, degree of loading, nature of solvent and temperature of reaction.