



شبكة المعلومات الجامعية  
التوثيق الإلكتروني والميكرو فيلم

# بسم الله الرحمن الرحيم



**HANAA ALY**



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التوثيق الإلكتروني والميكروفيلم



# شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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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

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



**HANAA ALY**



Ain Shams University  
Faculty of Science  
Department of Chemistry



## RECOVERY AND PURIFICATION OF TITANIUM OXIDE PIGMENT FROM ROSETTA ILMENITE MINERAL CONCENTRATE USING MODIFIED ORGANIC MATERIALS

Thesis Submitted by

**Islam Mansour Abd El-Fadiel El-Sayed Fouda**

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To

Department of Chemistry  
Faculty of Science, Ain Shams University

*Supervised by:*

*Prof. Dr.*

**Mohamed Youssef El-Kady**

*Prof. of Organic Chemistry  
Faculty of Science  
Ain Shams University*

*Prof. Dr.*

**Enass Mohamed El-Sheikh**

*Prof. of Ore Processing  
Nuclear Materials Authority  
Egypt*

*Prof. Dr.*

**Ahmed Osman Youssef**

*Prof. of Analytical Chemistry  
Faculty of Science  
Ain Shams University*

*Prof. Dr.*

**Ahmed Hussien Orabi**

*Prof. of Analytical Chemistry  
Nuclear Materials Authority  
Egypt*

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Ain Shams University  
Faculty of Science  
Chemistry department



## Approval Sheet

Ph.D. Thesis

### Recovery and purification of Titanium oxide Pigment from Rosetta Ilmenite Mineral Concentrate Using Modified Organic Materials

Submitted by

*Islam Mansour Abd El-Fadiel El-Sayed Fouda*

*"M.Sc in Organic Chemistry "*

**A Thesis for**

**Ph.D. of Science in Chemistry**

**Thesis Advisors:**

**Approved**

**Prof. Dr. Mohamed Youssef El-Kady**

Prof. of Organic Chemistry

Faculty of Science - Ain Shams University

**Prof. Dr. Enass Mohamed El-Sheikh**

Prof. of Ore Processing

Nuclear Materials Authority – Egypt

**Prof. Dr. Ahmed Osman Youssef**

Prof. of Analytical Chemistry

Faculty of Science - Ain Shams University

**Prof. Dr. Ahmed Hussien Orabi**

Prof. of Analytical Chemistry

Nuclear Materials Authority - Egypt

**Head of Chemistry Department**

**Prof. Dr.: Ayman Ayoub Abdel-Shafi**

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**Islam Mansour Fouda**



*I dedicate this work to my parents to whom I owe my*

*life. On initiative of his high spirited personality*

*I was led to the research career.*

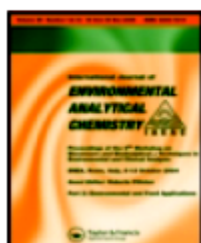
*Finally, I dedicate this work to my wife and*

*my daughters (Estabraq, Sedra and Mesk).*

وَلَوْ أَنَّ النَّبِيَّ أَحْمَدَ اللَّهُ دَهْرًا  
مَا أُرْفِيتَ بِحُزْنٍ أَمِينٍ نَتَّعِمُ ..

الحمد لله دائماً وأبداً

# Publication



## Elimination of Cr (VI), Pb (II), V (V), and Cd (II) ions from Titanium oxide Pigment from Rosetta ilmenite Concentrate Using synthesised Cellulose Phosphorus Oxychloride

Islam M. Fouda, Mohamed Y. El-Kady, Enass M. El-Sheikh, Ahmed H. Orabi & Ahmed O. Youssef

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# Abbreviations

## List of abbreviations and symbols

MCC	Microcrystalline cellulose
CNCs	Cellulose nanocrystals
PVC	Polyvinyl chloride
DMSO	Dimethyl sulfoxide
PEI	Polyethyleneimine
ph.ph.	Phenol phthalein
M.O.	Methyl orange
BET	Polyethylene terephthalate
COP	Cellulose impregnated phosphorus oxychloride
Comp.	Compound
D.P.	Degree of polymerization
$H^1$ -NMR	Proton Nuclear Magnetic Resonance
$d_6$	Deuterated DMSO
M/L	Mole/Liter
$^{\circ}K$	kelvin scale
IR	Infra-Red Spectra
SEM	Scanning Electron Microscope
FESEM	Field Emission Scanning Electron Microscopy
AAS	Atomic Absorption Spectrometer
ICP	Inductively Coupled Plasma
TMS	Tetramethylsilane
EDX	Energy Dispersive X-Ray Analysis

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