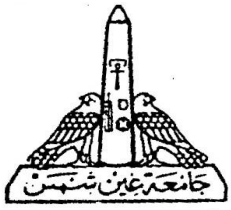


Ain Shams University
Faculty of Science
Chemistry Department

"Chemical Studies on the Removal of Some Heavy Elements from Aqueous Solutions by Modified Pottery Materials"

By

Moubarak Abdel-Raheem Sayed Marzouk

B.Sc.in Chemistry&Microbiology, Faculty of Science,

Assiut University (2007)

A Thesis

Submitted for the degree of Master of Science as a partial fulfillment for the requirements of the Master of Science (Inorganic Chemistry)

To

Department of Chemistry, Faculty of Science,

Ain Shams University,

Cairo, Egypt.

2015

Ain Shams University
Faculty of Science
Chemistry Department

"Chemical Studies on the Removal of Some Heavy Elements from Aqueous Solutions by Modified Pottery Materials"

A Thesis

Submitted for the degree of Master of Science as a partial fulfillment for the requirements of the Master of Science (Chemistry)

By

Moubarak Abdel-Raheem Sayed Marzouk

B.Sc. Assiut University (2007)

To

Department of Chemistry, Faculty of Science, Ain Shams University.

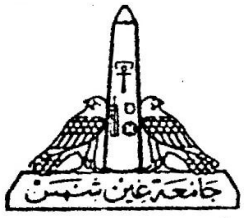
Supervised By

Prof. Dr
Saad Abdelwahab Mohamed
Prof. of physical Chemistry.
Faculty of Science,
Ain Shams University

Prof. Dr.
Hisham Fouad Aly
Professor of Nuclear Chemistry,
Hot Labs. Center,
Atomic Energy Authority

Prof. Dr.
Abdel-Fattah Ibrahim Helal
Professor of Nuclear Physics,
Nuclear research Center,
Atomic Energy Authority

2015



Faculty of Science
Chemistry Department

Approval sheet for Submission
M.Sc.Thesis

"Chemical Studies on the Removal of Some Heavy Elements from Aqueous Solutions by Modified Pottery Materials"

Thesis Presented By

Moubarak Abdel-Raheem Sayed Marzouk.

B. Sc. 2007

Thesis supervisors **Signature**

1- Prof. Saad Abdelwahab Mohamed .....
Prof. of physical Chemistry.
Faculty of Science,
Ain Shams University.

2- Prof. Dr. Hisham Fouad Aly .....
Professor of Nuclear Chemistry,
Hot Labs. Center,
Atomic Energy Authority.

3- Prof. Dr.Abdel-Fattah Ibrahim Helal .....
Professor of Nuclear Physics,
Nuclear Research Center,
Atomic Energy Authority.

Head of the Chemistry Department

Prof. Dr. Hamed Ahmed Younes Derbala

2015

Acknowledgment

First of all and above, I thank and pray to ALLAH for explicitly known and uncountable reasons.

My deep appreciation and sincere thanks to ***Prof. Dr./ Saad Mohamed Abdel-Wahab****, professor of physical chemistry, Ain Shams University, for sponsoring this thesis and continuous encouragement and guidance.*

Heartly, I would like to express my grateful gratitude to ***Prof.Dr./ Hisham Fouad Aly****, professor of nuclear chemistry, Atomic Energy Authority for supervising the research investigated and for his valuable guidance which made this thesis possible in its final shape. This research was carried out under his direction. The guidance and support given by him were indispensable to the completion of this work.*

I wish to express my grateful gratitude to ***Prof.Dr./ Abdel-Fattah I.Helal****, professor of nuclear physics, Atomic Energy Authority for suggesting the point and for valuable discussion, continuous guidance and sincere supervision and help during the different stages of this work.*

I am indebted to all staff of the Accelerators and Ion Sources Department, Nuclear Research Center, Atomic Energy Authority and also all the staff members of the Central Laboratory for Elemental and Isotopic Analsis.(CLEIA)Nuclear Research Center, Atomic Energy Authority.

Finally I can't forget the complete assistance and faithful encouragement of my family during the preparation of this thesis.

Content

Chapter I: Introduction

Chapter II: Experimental

Chapter III: Results and Discussion

List of Figures