بسم الله الرحمن الرحيم

HOSSAM MAGHRABY

شبكة المعلومات الجامعية

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

HOSSAM MAGHRABY

شبكة المعلومات الجامعية

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

HOSSAM MAGHRABY

شبكة المعلومات الجامعية

بعض الوثائق الأصلية تالفة

HOSSAM MAGHRABY

شبكة المعلومات الجامعية

بالرسالة صفحات

لم ترد بالأصل

HOSSAM MAGHRABY

Menoufiya University

PHYSICOCHEMICAL STUDIES OF SOME TRANSITION METAL COMPLEXES OF 1-AROYL-4-PHENYL-3-SEMI AND THIOSEMI CARBAZIDES

A Thesis

Presented to Faculty of Science,
Menoufiya University, Shebin El-Kom,
For the
DEGREE OF THE MASTER OF SCIENCE

(Physical Chemistry)

1. Governmental Committee.

By

Meral Hosni Abd El-Gawad Farag

B.Sc. Chemistry

Supervised by

Prof. Dr. *Fathy A. El-Said*
Professor of Inorganic Chemistry
Menoufiya University

Prof. Dr. *Abd El-Aleem H. Abd El-Aleem*
Professor of Organic Chemistry
Menoufiya University

2. Dr. Raafat M. Easa
Professor of Inorganic and physical Chemistry. Tanta – University

3. Dr. Abd El-Fattah M. Habeeb
Professor of physical chemistry
Tanta – University

September 2002

Prof. Dr/ Fathy. A. El-Said
Professor of inorganic chemistry in Menoufia Universi

Prof. Dr./ Abd. EL-Aleem. H. Abd. El-Aleem
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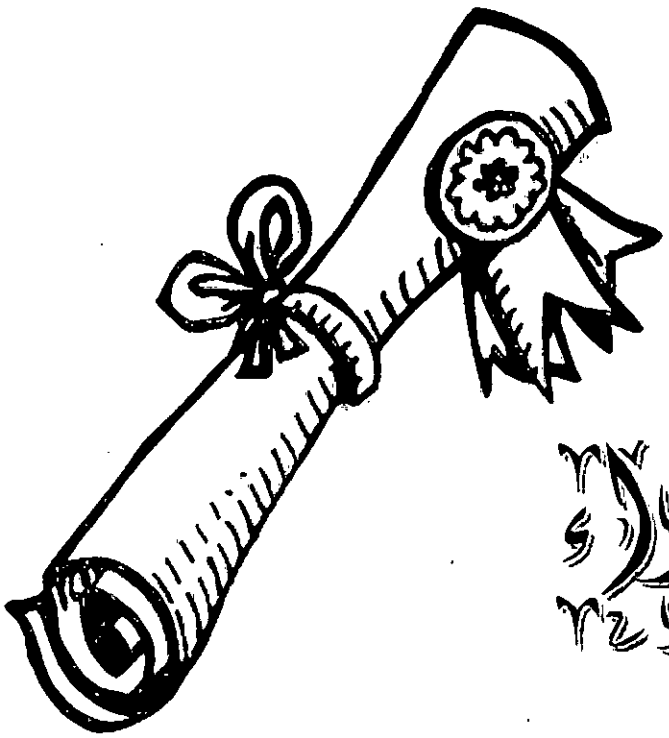
2002


بسم الله الرحمن الرحيم



إهداء

إلى أغلى وأعز ما عندي ..

والدي ووالدتي وإخوتي وأولادي

أهدي هذا العمل الناجح

شكراً وتقديراً لهم لما بذلوه من جهد مشكور طوال حياتي

العلمية ليظهر هذا البحث إلى النور راجية من الله عز وجل أن

يوفقني دائماً وأن أكون عند حسن ظن الجميع

إنه نعم المولى ونعم المجيب

ميرال حسني

CONTENTS

NOTE

Beside the work carried out in this thesis, the candidate has attended postgraduated course for one year in Physical Chemistry, covering the following topics:-

1- Applications of Spectroscopy.

2- Surface Chemistry.

3- Advanced Analytical Chemistry.

4- Advanced Thermodynamics.

5- Solid State Chemistry.

6- Electro-Chemistry.

7- Quantum Chemistry.

8- Selected Topics in Physical Chemistry.

9- Kinetic-Chemistry.

10- Advanced Physical Chemistry.

11- Advanced Inorganic Chemistry.

12- Statistics.

13- Computer.

14- English Language.

She had successfully passed an examination in these courses.

Prof. Dr. F. A. Ali

Head of Chemistry Department

ACKNOWLEDGMENT

I am deeply thankfull to God, by the grace of whom the progress of this work was possible. I am indebted with my sincere gratitudes and appreciation to **Prof. Dr. Fathy A. El-Saied**, Professor of Inorganic Chemistry, Department of Chemistry, Faculty of Science, El-Menoufia University, and **Prof. Dr. Abd El-Aleem H. Abd El-Aleem**, Professor of Organic Chemistry, Department of Chemistry, Faculty of Science, El-Menoufia University, for Their suggestion and suppervision of the work described herein.

The author is grateful to **Prof. Dr. Farag A. Ali** Professor of Inorganic Chemistry and Head of Chemistry Department, Faculty of Science, El-Menoufia University for providing facilities and encouragement.

I do acknowledge with great pleasure the great help afforded by the Dean of the Faculty of Science, **Prof. Dr. Anwar Hegazy**, for his scientific promotion efforts.

I am thankful to father, mother, my brothers and my friends for giving me such a great start in life and for their endless support.

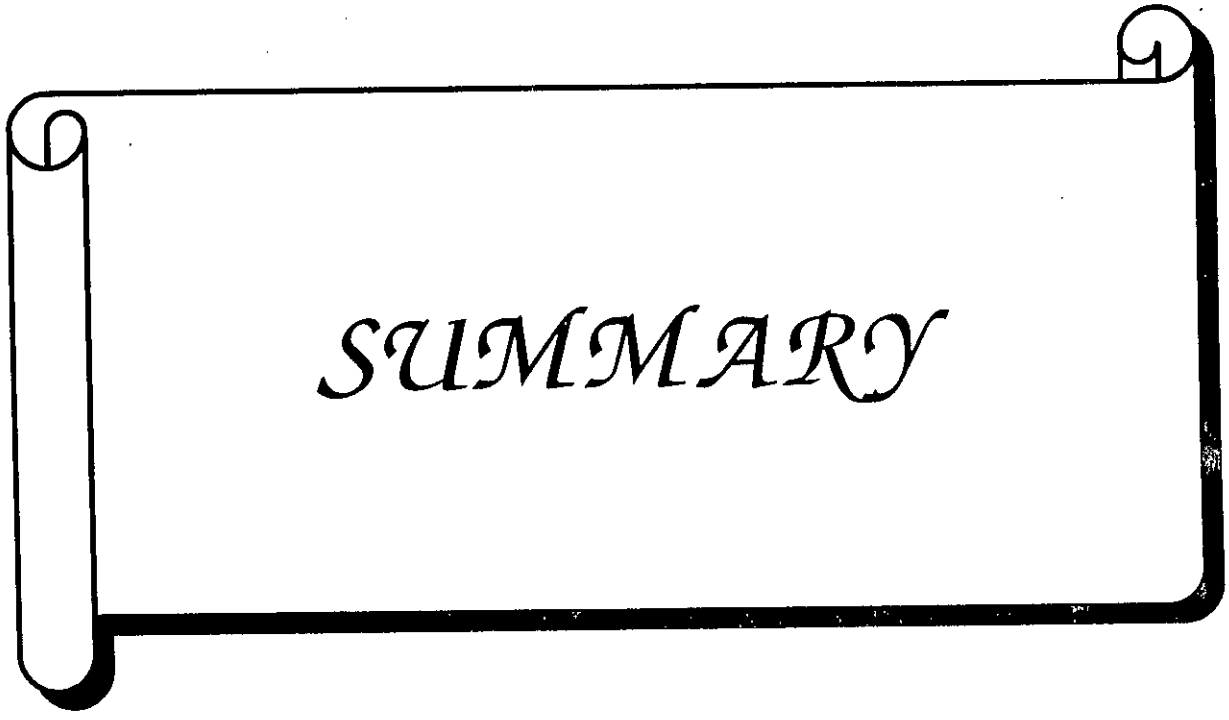
Lastly, I wish to thank all colleagues and staff members of Chemistry Department for facilities they provided during this work.

Meral H. A. Farag

AIM OF WORK

Metal complexes of thiosemicarbazides and semicarbazides are of great interest due to their biological activity against smallpox, viral diseases and certain types of tumours.

The aim of the current thesis is to prepare and characterize Ni(II) and Co(II), complexes of 4-phenyl-1-aroyl-3-thiosemicarbazides (H_2L^1 – H_2L^3) and 4-phenyl-1-aroyl-3-semicarbazide (H_2L^4). Characterization of the complexes have been achieved using analytical, spectral, magnetic and thermal techniques in order to know the divers coordinating properties and reactivity of this important class of ligands.


SUMMARY

SUMMARY

The thesis comprises mainly three chapters, which are described as follows:

I- Introduction:

In this chapter, a literature survey is made on:

I-1. The importance of thiosemicarbazides and their metal complexes.

I-2. Metal complexes of 4-phenyl-1-aroyl-3-thiosemicarbazides.

II- Experimental:

In this chapter, the methods used for preparation of thiosemicarbazides, semicarbazides and their Ni(II) and Co(II) complexes were described. The techniques for the analytical, spectral (IR, UV and Vis.), magnetic susceptibility and thermal (T.G.A) measurements were also described.

III- Results and Discussion:

In this chapter the complexes of Ni(II) and Co(II) with 4-phenyl-1(2-thienoyl)-3-thiosemicarbazide (H_2L^1), 4-phenyl-1(2-nicotonoyl)-3-thiosemicarbazide (H_2L^2), 4-phenyl-1 (2-furoyl)-3-thiosemicarbazide(H_2L^3) and 4-phenyl-1(4-toloyl)-3-semicarbazide (H_2L^4) have been described. The complexes have been studied using, analytical, spectral (IR, UV and Vis.), thermal measurements (T.G.A) and magnetic susceptibility measurements. The analytical, magnetic and spectral studies showed that the ligands reacted with different salts of Ni(II) and Co(II) ions in 1:1 molar ratio forming different types of complexes. Complexes (1,4,7 and 9) in which