



Ain shams university
Faculty of science
Chemistry department

***Preparation and characterization of nanopigments by
wet milling technique and their applications in
printing ink industry***

A Thesis Submitted

To

Faculty of science

In partial fulfillment of the requirements for the degree of

Master of philosophy in

Chemistry

Submitted by

Sherif Mohamed Abd Elmonam Elshamy

Supervised by

Prof. Dr. Mostafa Mohamed Hassan Khalil

Professor of inorganic chemistry, Faculty of science, Ain Shams University

Dr. Adel Mohy Eldin Gabr Hanafi

***R&D Executive Director at Paints and chemical industries company
(PACHIN)***

(2018)



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Approval Sheet

Name of candidate: Sherif Mohamed abd Elmonam Elshamy

Degree: M.Sc. in chemistry.

Thesis Title: Preparation and characterization of nanopigments by wet milling technique and their applications in printing ink industry.

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Approval

Prof Dr.\ Ibrahim H.A.Badr

Head of chemistry department



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This thesis has been approved by:

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Statement

This thesis is submitted in partial fulfillment of the M.Sc Degree, Faculty of Science, Ain Shams University. In addition to the work carried out in this thesis the candidate, Sherif Mohamed Elshamy has attended postgraduate studies in the following topics and passed successfully in the final examination in the academic year 2010-2011:

- 621 Coordination Chemistry
- 622 Radiochemistry and Separation Techniques
- 623 Electrochemistry and Electrochemical Analysis
- 624 Group Theory and Computer Programming
- 625 Spectroscopic Methods for Structural and Analytical Chemistry
- TOEFL

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

اقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ ﴿١﴾

خَلَقَ الْإِنْسَانَ مِنْ عَلَقٍ ﴿٢﴾ اقْرَأْ

وَرَبُّكَ الْأَكْرَمُ ﴿٣﴾ الَّذِي عَلَّمَ

بِالْقَلَمِ ﴿٤﴾ عَلَّمَ الْإِنْسَانَ مَا لَمْ

يَعْلَمُ ﴿٥﴾

صدق الله العظيم

Acknowledgement

First of all, my greatest thanks to ALLAH for giving me the power to complete this work,

My deep gratitude to prof. Dr/ Mostafa Khalil

Professor Doctor of inorganic chemistry at Ain shams university

I would like to thank Dr/ Adel Mohy Eldin

*R&D Executive Director at paints and chemical industries company
(PACHIN)*

Also my thank to chemist/Nader Fathallah

*General Manager of raw materials and quality control labs at paints
and chemical industries company (PACHIN)*

Also my thank to chemist/Helmy Sabry

*Director of R&D offset ink labs at paints and chemical
industries (PACHIN)*

*Last but not at least I am grateful to my father, mother, wife,
lovely daughters, sisters as without their encouragement and
patience, this work could not be achieved.*

*I would also like to thank my colleagues and every person who
contributed by any mean to produce this work*

