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B1-299

***STUDIES ON THE PREPARATION AND
CHARACTERIZATION OF SOME PIGMENTS AND
EXTENDERS FROM LOCAL ORES FOR COATING
APPLICATIONS***

**A THESIS
Submitted
For The Fulfillment Of
The Requirements for Ph.D.
In Chemistry**

To

**The Faculty of Science
Cairo University
Egypt**

By

**Nivin Mohamed Ahmed Hussein
B.Sc., M.Sc.**

2001

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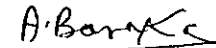
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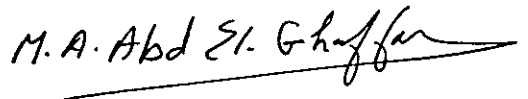
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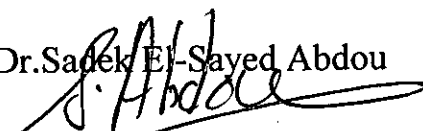
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ABSTRACT

Name : Nivin Mohamed Ahmed Hussein.

Title of thesis :

Studies on the preparation and characterization of some pigments and extenders from local ores.

Degree: (Ph.D) Thesis, Faculty of Science, Cairo University, 2001/2002.

This work has been carried out to investigate and characterize some prepared inhibitive pigments containing mainly single or double metal ions which are suitable as pigments and extenders. There pigments containing a series of phosphate, molybdate, chromate pigments of single and mixed metal ions, in addition to blank fixe (precipitated barium sulfate). The prepared pigments have been characterized and their structures were elucidated using chemical measurements (atomic absorption and emmision) and spectrophotometric measurements (x-ray diffraction, transmission electron microscope) besides thermal gravimetric analysis and color measurements. Some of the prepared pigments comprise phosphate pigments have been surface modified using stearic acid and ammonium stearate to improve the dispersability and wettability of the pigment particles. The investigated pigments have been incorporated in anticorrosive paint formulations based on medium alkyd resin, medium alkyd-melamine formaldehyde resin and epoxy resin. The physico-mechanical properties in addition to the corrosion proptective properties of the paint films were examined using several methods, e.g. accelerated laboratory corrosion test, salt spray, and by electrochemical methods (potentiostatic polarization and linear polarization) characteristics of the paint films.

Key words : Anticorrosive pigments, phosphates, molybdates, chromates, surface modification, and electrochemical measurements.

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AIM OF THE WORK

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