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شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

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شبكة المعلومات الجامعية

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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Organic compounds as modifiers in Portland cement hydration

Thesis

Submitted in partial fulfilment of the requirements for the degree of M.Sc. (Chemistry)

BY

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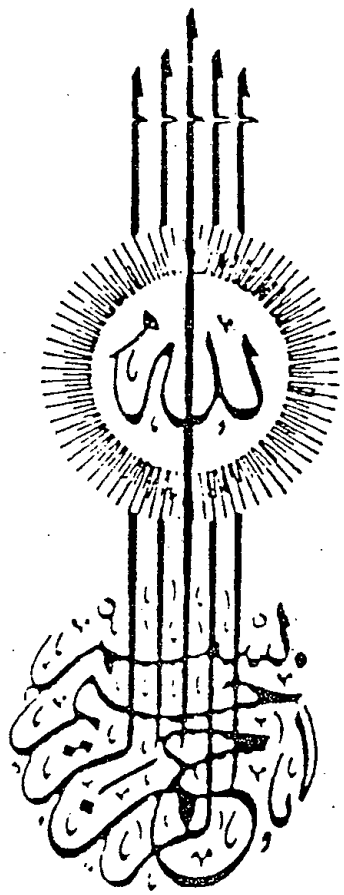

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Organic compounds as modifiers in Portland cement hydration

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Organic compounds as modifiers in Portland cement hydration

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Acknowledgment

I wish to express my deepest gratitude to Dr. E.I.Al-Wakeel, Assoc. Prof. Of Physical Chemistry, Faculty of Science, Suez Canal University., for suggesting the subject of this thesis and for his continual help, advice, guidance and faithful supervision during the course of this work, and Dr. I.M.El-Deen, Ass. Prof. Department of chemistry, Faculty of education, Suez Canal University, for his continual help.

I wish to express my gratitude to, the staff members of the chemistry department, Faculty of Science and staff members of the Education Faculty of Port Said for their help during the progress of this work.

Finally, I wish to express my grateful thanks and gratitude to my family for their help.

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CHAPTER 1

INTRODUCTION AND OBJECT OF INVESTIGATION

CHAPTER 1

Introduction And Object Of Investigation

1.1. Introductory Notes:

The name Portland cement is given originally due to the resemblance of set cement to Portland stone (England). In its broadest since, the word cement denotes any kind of binding agent. This definition includes a wide variety of substances having little in common with one another but their adhesiveness. However, materials most commonly associated with this word are hydraulic cement of which Portland cement is the most familiar. Hydraulic cement when mixed with enough water to form a plastic mass (paste), the mixture starts to set, loses its plasticity and becomes hard. The paste continues to harden and properties of the hardened concrete such as strength, volume stability and permeability to water, are mainly determined by the properties of the hydration products in cement paste.

Portland cement is manufactured by intimately mixing a calcareous (rich in lime, like limestone) and an argillaceous (rich in silica and alumina such as clay) materials which can be done either in water or in dry condition, i.e. using "Wet" or "Dry" proccesses. Mixed and ground raw mixture is burned in a rotary kiln at a temperature up to 1450 ^{0}C. The prouduct of the rotart kiln called cement clinker, which is cooled, mixed with a few percent of gypsum and ground to a very fine powder.