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شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



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**“A STUDY ON
PHOTOCROSSLINKABLE
UNSATURATED POLYESTERS”**

**Thesis
Submitted to
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Ain Shams University
(Cairo)**

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“A STUDY ON PHOTOCROSSLINKABLE UNSATURATED POLYESTERS”

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Dedication

To my parents for their everlasting giving and kindnesses throughout my life .

To my hasband for his support and encoaragement .

To my children , Engi & Athar with all my love.

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ABSTRACT

Zizi Ebrahim Ebrahim Abdeen

"A study on photocrosslinkable unsaturated polyesters"
Egyptian Petroleum Research INSTITUTE (EPRI)

Unsaturated polyesters resins find extensive uses , the resins consist essentially of unsaturated polyesters having (1000-5000) molecular weight dissolved in reactive monomer usually styrene .Catalysts such as organic peroxides initiate curing of the resin .

Photo curing , by using of electromagnetic radiation has appeared to be an attractive alternative to the use of peroxides. The main advantages offered by photo-curing appear to be very rapid cure , reduced energy requirements and the avoidance of peroxide catalyst. A number of vinyl monomers have been photopolymerise with visible light by suitable photo-initiators .Light-curing polyesters have been described in the patent literature.

In the present investigation an unsaturated polyester-styrene, acrylic acid , methy methacrylate and polyurethane prepolymer co-polymers was prepared with different compositions and cured by MEK peroxide for comparative reasons and then photoinitiator systems have been developed and tested using light sources including fluorescent tubes , tungsten filament bulbs ,mercury tungsten lamp and natural sunlight.

Physical and mechanical properties of the curable products was carried out ,the results indicates that some of the radiation curable compositions of the present investigation are especially useful as radiation curable coating compositions .

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