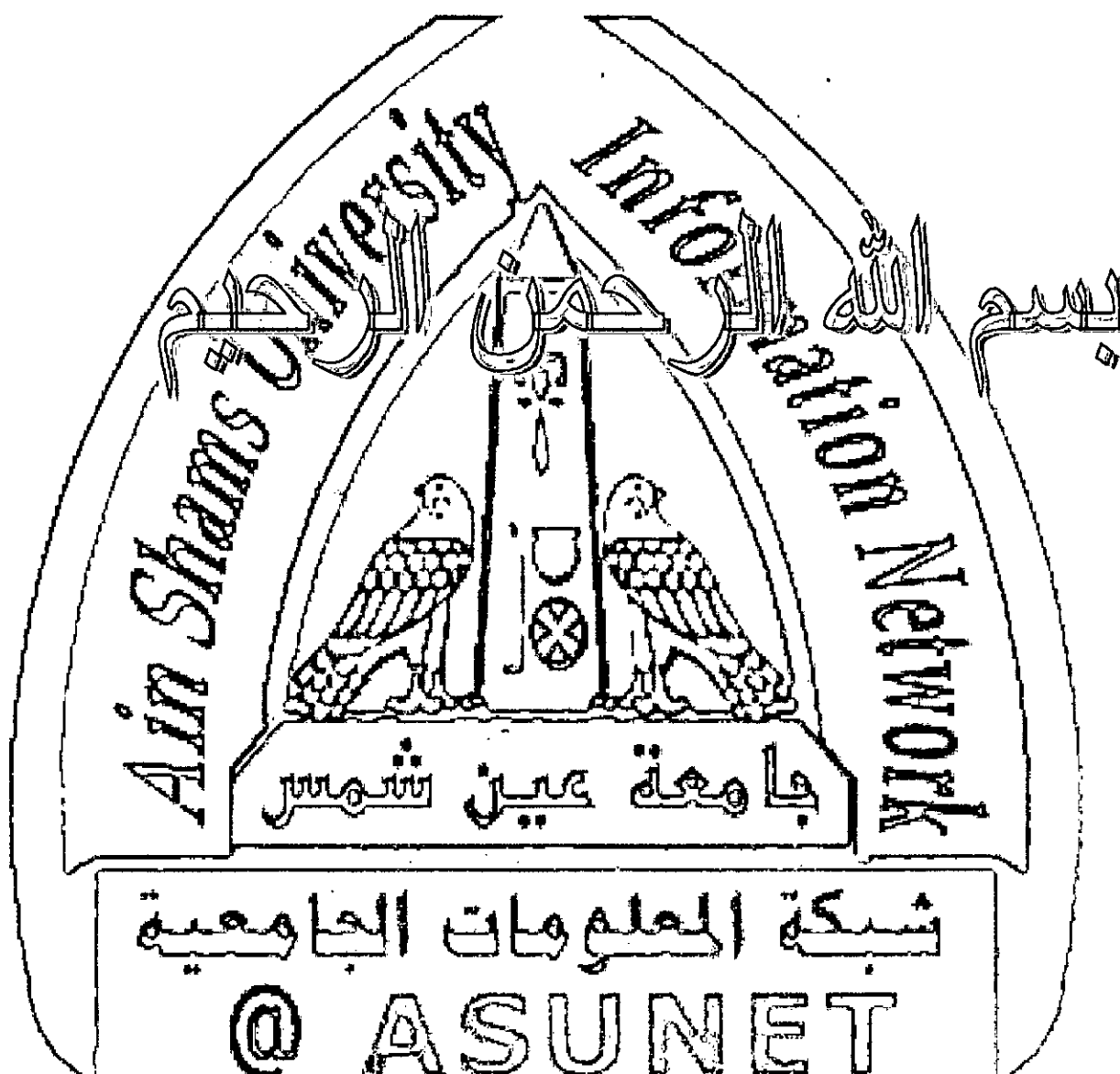




شبكة المعلومات الجامعية





# شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



شبكة المعلومات الجامعية

# جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

## قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها  
علي هذه الأفلام قد أعدت دون أية تغيرات



## يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of  
15-25- c and relative humidity 20-40%

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660

# **THERMAL STABILIZATION OF POLYVINYL CHLORIDE USING ALUMINA**

BY  
Marwa Mostafa Yousef  
B.Sc.Chem.Eng.

A Thesis submitted to the  
Faculty of Engineering- at Cairo University  
In Partial Fulfillment of The requirements for degree of  
MASTER OF SCIENCE  
In  
Chemical Engineering

Faculty of Engineering, Cairo University

Giza, Egypt

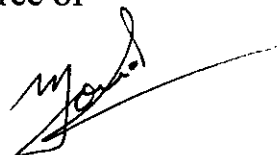
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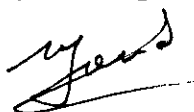
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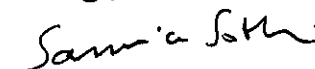
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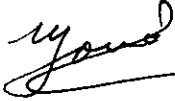

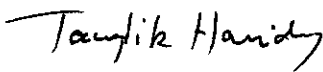
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## ABSTRACT

PVC has been widely used for various purposes because of its low price, good durability, availability and ease of processing; PVC is virtually never used alone, but always in combination with other materials. many of its advantages are enhanced by incorporation of small solid particles as reinforcing agent, stabilizer, plasticizer, pigments or other additives.

The thermal degradation of a type of PVC was investigated. Complex processes for PVC degradation were evidenced. The kinetic analysis of dehydrochlorination and subsequent process was investigated by thermogravimetric (TG) analysis, and derivative thermogravimetry (DTG) at different temperatures. The values of non-isothermal kinetic parameters were determined by Sabri et al method. Isothermal kinetics were also studied.

Aluminum oxide was used as a stabilizer in different ratios. It was added to PVC in the following percentage 33.3% , 25% , 20% , 16.7%.

The effect of these different ratios on the thermal properties of the polymer was studied to determine the optimum amount which can be used as a thermal stabilizer.

A handwritten signature in black ink, consisting of stylized cursive letters, followed by a long horizontal line extending to the right.

## **ACKNOWLEDGMENT**

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