



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Ain Shams University Information Network  
جامعة عين شمس

شبكة المعلومات الجامعية

@ ASUNET



# 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 تغييرات



## 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%

# بعض الوثائق الأصلية تالفة



# بالرسالة صفحات نم ترد بالاصل

**THE EFFECT OF INCORPORATION OF A  
COMONOMER INTO A COMPOSITE RESIN  
AND A COMPOMER ON CERTAIN  
BIOLOGICAL AND MECHANICAL  
PROPERTIES**



**Thesis**

**Submitted to the Faculty of Dentistry in partial fulfillment of the  
requirements of the Master Degree in Conservative Dentistry**

**By**

**Mohamed Salah Abd El Aziz  
B.D.S. Cairo University**

**Faculty of Dentistry  
Ain Shams University  
2001**

1000

1000

1000

1000

1000

1000

**THE EFFECT OF INCORPORATION OF A  
COMONOMER INTO A COMPOSITE RESIN  
AND A COMPOMER ON CERTAIN  
BIOLOGICAL AND MECHANICAL  
PROPERTIES**

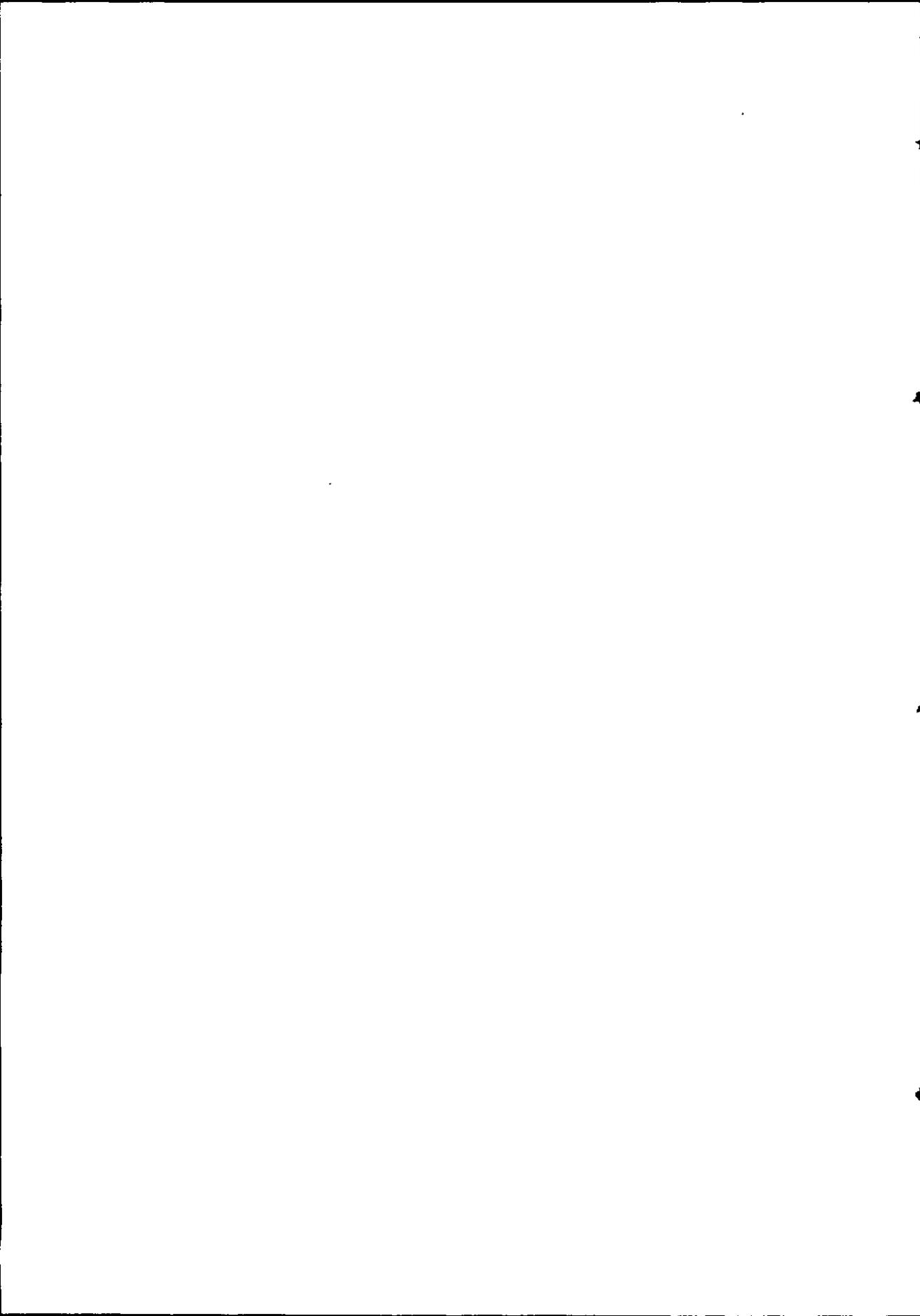
**Thesis**

**Submitted to the Faculty of Dentistry in partial fulfillment of the  
requirements of the Master Degree in Conservative Dentistry**

**By**

**Mohamed Salah Abd El Aziz  
B.D.S. Cairo University**

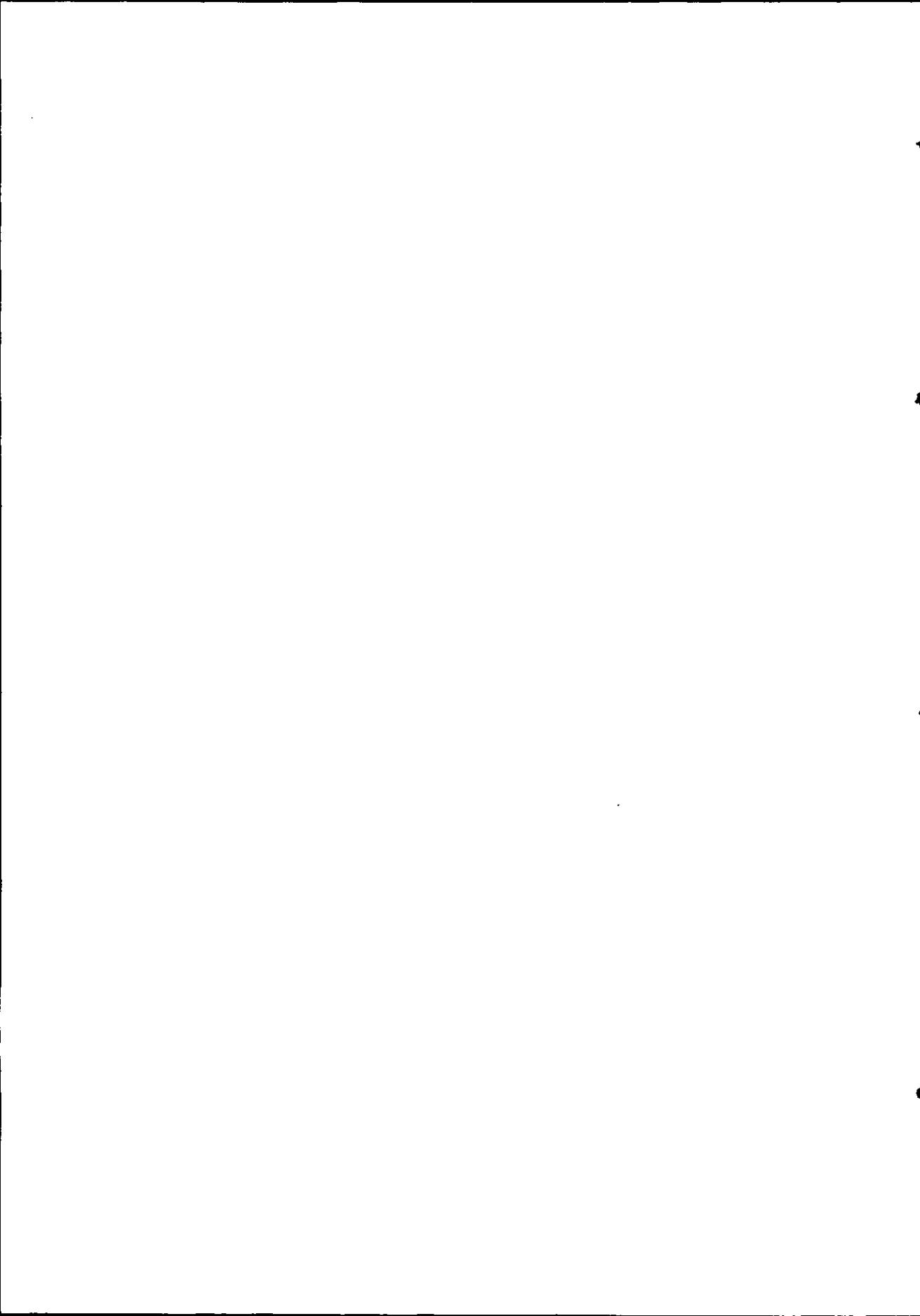
**Faculty of Dentistry  
Ain Shams University  
2001**



## **Supervisors**

*Dr. Fadel Sobhy Mahmoud*  
**Professor of Conservative Dentistry**  
**Conservative Dentistry Department**  
**Faculty of Dentistry**  
**Ain Shams University**

*Dr. Ghada Atef Alian*  
**Associate Professor of Dental Biomaterials**  
**Prosthodontic Department**  
**Faculty of Dentistry**  
**Ain Shams University**



# Acknowledgment

I would like to express my sincere gratitude to Dr. Fadel Sobhy Mahmoud, professor of conservative dentistry, Faculty of Dentistry, Ain Shams University, for his valuable supervision, unlimited scientific support and guidance throughout this work.

I wish to express my highest appreciation and deep gratitude to Dr. Ghada Atef Alian, Associate Professor of Biomaterials , Prosthodontic department, Faculty of Dentistry, Ain Shams University, for meticulous supervision and revision of the whole work. It was by her continuous guidance and unlimited help that this work had come to light.

I would like to thank Dr. Eglal Hegazi, Professor of organic chemistry, Faculty of Science, Ain Shams University, for preparing the Methacyloyloxy Dodecyl Pyridenium Bromide (MDPB) comonomer.

Finally I would like to thank all the members of dental biomaterials department, conservative dentistry department and all those who supported me throughout the course of this work.



# List of contents

<u>Subject</u>	<u>Page</u>
Introduction.....	1
Review of literature.....	3
Aim of the study.....	33
Materials and methods.....	34
Results.....	47
Discussion.....	60
Summary and conclusions.....	69
References.....	71

