



# **Shear Bond Strength of Two Resin Cements to Ceramic and Tooth Substrate (Enamel And Dentin) Using Different Bonding Approaches**

## **Thesis**

Research Project Submitted to the Faculty of Oral and Dental  
Medicine, Cairo University in Partial Fulfillment of the Master  
Degree In  
*(Fixed Prosthodontics)*

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**2009**

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# **ACKNOWLEDGEMENTS**

The completion of this thesis became possible with the help and support of a number of people to whom I am greatly indebted. I believe it is my duty to register here my deep gratitude to them.

I would like to express my sincere gratitude to **Dr. Ashraf Hassan Mokhtar**, Professor & head of Fixed Prosthodontics department, Faculty of Oral & Dental Medicine, Cairo University, for his guidance, support, directions and continuous encouragement. It has been my privilege and almost pleasure to conduct this work under his supervision.

A special acknowledgment for **Dr. Gehan Abd El-Hady ElNaggar**, Assistant professor of Fixed Prosthodontics, Faculty of Oral & Dental Medicine, Cairo University, for her continuous, endless help, motivation and encouragement through the various stages of this study.

My acknowledgement would be incomplete without extending my thanks to **Dr. Mohammed Mahmoud Abdel Mohsen**, professor of operative dentistry, Faculty of Oral & Dental Medicine, Cairo University and former dean of Misr international university and **Dr. Marwa Mokbel**, lecturer of oral pathology, Misr international university, for their generous help, effort and time that have been of great value for this research.

I would not forget to thank the staff members of the fixed Prosthodontics Department for all their help and cooperation during my research work.

Last but not least, I would like to thank my mother & sisters who are always supporting and encouraging me in every step in my life.

# قوة الربط القصية لأسمنتين راتجيين مع الخزف و المادة السنية ( المينا والعاج) باستخدام مداخل مختلفة للربط

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(٢٠٠١)

إستيفاء للحصول على درجة الماجستير فى  
فرع الإستعاضات السنية المثبتة

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## **Introduction**

Advances in adhesive technology have occurred at a remarkable place over the past 10 years. It seems as though every month brings a "new" and "better" bonding system onto the market. Clinical protocol is constantly changing. Just when clinicians have mastered one technique, they find it has been replaced by another.

Adhesion offers a number of advantages including retention and stabilization of restoration without removal of sound tooth structure; it reduces marginal leakage at the restoration tooth interface, transmits and distributes functional stresses across the bonding interface to the tooth structure with potential to reinforce weakened tooth structure<sup>(78)</sup>. It has also expanded the range of possibilities for aesthetic restorative dentistry<sup>(38)</sup>.

Today's patient pays more attention to cosmetics than ever before, and teeth are a key consideration in personal appearance. Tooth-colored restorative materials are used to cosmetically restore and/or re-contour teeth with little or no tooth preparation. Advances in dental adhesive technology have allowed the dentist to improve facial aesthetics in a relatively simple and economical way.

Bond strength between tooth substrate and restoration is affected by a variety of factors including type of luting agent, content of adhesive material and type of surface pretreatment of both tooth and fitting surface of the restoration.

Eventually, the current adhesive systems should be able to provide sealed margins, but the progressive loss of this marginal seal and successive marginal deterioration caused by microleakage, is mainly caused by polymerization shrinkage of resin cement and stresses resulting from thermal dimensional changes. Therefore, most progress in adhesive