

**Influence of Pre-Etching of Tooth Substrates  
Prior to Application of Self-Etching Adhesive  
on Shear Bond Strength of Nano-Filled  
Resin Composite Restoration**

**Thesis**

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بسم الله الرحمن الرحيم

قَالُوا سُبْحَنَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا  
إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ ﴿٣٢﴾

صدق الله العظيم  
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## ***Dedication***

*I am most thankful to **Allah** for all his mercy,  
kindness, grace and blessings that granted  
me the ability to perform and accomplish  
this study.*

*I humbly dedicate this piece of work to my  
precious **mother** and my family for  
their unique love, care,  
help, support and  
encouragement.*

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## **Abstract**

This research was designed to assess the influence of pre-etching of enamel and dentin tooth substrates using the 37% phosphoric acid gel (Ivoclar Vivadent Total Etch ) prior to the application of the self-etching adhesive system ( Adper Prompt L-Pop) on the shear bond strength of the nano-composite resin (Filtek Supreme XT Universal Restorative); and to assess the influence of aging on the durability of the formed bonds. A total of 186 freshly extracted, sound, noncarious, human permanent molars were selected and used for shear bond strength testing and S.E.M. examination. The enamel and the dentin specimens pre-etched for 10 sec. recorded statistically significantly higher mean shear bond strength values.

### **Key words:**

- Phosphoric acid pre-etching.
- Shear bond strength.
- Self-etching adhesive.
- Aging.
- Enamel and Dentin.



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