

## **Effect of internal structure of zirconia on its bond strength with resin adhesives.**

Zirconia has witnessed great changes and developments since its first introduction to the dental field almost 20 years ago. Starting with the opaque tetragonal structure, passing through colored and stained frameworks, high toughness titanium reinforced zirconia, and today high translucency and cubic zirconia intended for monolithic anatomical restorations. Establishing a strong and a stable bond with zirconia was always a challenging task due to the inertness and chemical stability of the material.

Different surface treatments were proposed to improve surface quality of zirconia together with novel monomers were able to provide a strong and stable bond with resin adhesives. Nevertheless, artificial aging programs revealed contradicting reports. In this lecture, high light will be shed on interaction mechanisms of internal structure of zirconia with novel surface treatments and adapted monomers as a step towards establishing a strong bond with resin adhesive.