

## **Need for Protein Repellent Restorative Materials in Dentistry - The Need of Hour**

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Composite resin was introduced in dentistry as a tooth colored restorative material by RC Bowen in the year 1956. However, there are many failures associated with it such as secondary caries, fracture and marginal discoloration, of which secondary caries is considered as the most common failure [1,2]. The failures are associated with composite resin because of the formation of protein layer (salivary pellicle) on the tooth structure as well as on the restoration surface. The formed pellicle matures and leads to biofilm formation, containing cariogenic micro-organism which can alter the restorative material or the restorative material can alter the biofilms. For example, it has been found that the on the glass ionomer restoration the cariogenic biofilms promotes surface degradation [3] and esterases present in the biofilm degrades surface of composite resin restorations [4-6]. Considering these failures researchers decided to develop a material which has protein repellent potential that will inhibit cariogenic biofilm formation on the restoration surface.

There are various materials in dentistry which have been modified for the protein repellent property like Dental adhesives, Composite resin and Glass ionomer restorative materials. The components which have been added are quaternary ammonium compounds; nanoparticles of silver, zinc and amorphous calcium phosphate; antibiotics and chlorhexidine. Thus, with the advantages of above added antibacterial materials the composite resin material was formulated.

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