

Special Issue

Mechanical Properties and Microstructures of Glass-Ionomer Cements

Message from the Guest Editors

Glass-ionomer cements are one of the aesthetic restorative materials currently available in dentistry. These hydrophilic, bioactive cements are being continuously developed and studied. Their unique properties, namely long term fluoride release, adhesion to dentine and enamel, dimensional stability, buffering properties and biocompatibility are responsible for their clinical success when used as permanent or temporary restorations, bases, or luting materials. That includes a minimally invasive dentistry concept proposed together with Atraumatic Restorative Treatment (ART) by WHO for developing and developed countries. Disadvantages of glass-ionomer cements such as brittleness, compressive strength lower than that of dentine and enamel, and compromised polishability limit their indications and constitute a challenge for researchers and manufacturers. In this Special Issue, we plan to highlight and discuss modern trends in glass-ionomer cements, including methods of measuring and improving their mechanical properties, assessment of their microstructure and interaction with oral cavity environment including adhesion to dentine and enamel, and durability.

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