Dental Materials

Guest Editor:

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Message from the Guest Editor

The practice of dentistry depends completely on the properties and behavior of its specialized materials and processes. Advances in materials science, test methods, and characterization are at the heart of progress in most areas: Restorative dentistry uses resin composites and cements, such as glass ionomer; implantology is based on titanium and its alloys; other restorations use metals and a variety of ceramics from porcelain to CAD-CAM zirconia; orthodontics relies on the mechanics of metals; elastomers are used for impressions, in which models are cast in gypsum; and a wide variety of cutters and abrasives are used for shaping, finishing and oral hygiene. After mechanical and physical properties, biocompatibility can be crucial, while appearance has become important for invisible repair. Characterization is, therefore, essential, whether in the laboratory, in vitro tests for biocompatibility, and in vivo clinical trials.