

Special Issue on
Fiber-Reinforced Composites for Dental Applications

CALL FOR PAPERS

The reinforcement of polymers with continuous fibers has led to the introduction of fiber-reinforced composites (FRCs), which have applications in various engineering fields. FRC materials are tough and present high stiffness: weight and strength: weight when compared with other structural materials.

The reinforcement of dental resins with short or long fibers has been described in the literature for over 40 years. FRCs containing various fibers, such as carbon, polyaramid, polyethylene, and glass, have been studied, and recently glass fibers of various compositions have received acceptance as restorative and prosthetic materials. Furthermore, FRCs have been indicated for several different clinical applications in prosthodontics, including replacement of missing teeth by resin-bonded adhesive fixed dental prostheses of various kinds; reinforcement elements of removable dentures; and direct construction of posts and cores. Moreover, FRCs can be used for active and passive orthodontic applications, such as anchorage units, en masse movement units, and postorthodontic tooth retention.

Furthermore, the introduction of new technologies (such as nanofillers) and the potential to study the design principles of FRC devices open new fields of research for these materials both *in vitro* and *in vivo*. New techniques, materials, and bonding protocols need to be extensively tested.

On the basis of these considerations, this special issue is focused on dental applications of FRCs. We invite investigators and researchers to contribute with original research articles, clinical studies, reviews, and meta-analyses that will stimulate the continuing efforts to understand the background of FRCs, their interactions with other materials, and the development of new strategies to improve characteristics and clinical applications. Manuscripts will be considered on the topic of FRCs and their related properties and applications.

Potential topics include but are not limited to the following:

- ▶ Physical and mechanical properties
- ▶ Different FRC characteristics
- ▶ *In vitro* studies
- ▶ Influence of micro- and nanofillers in resin composites
- ▶ Clinical applications in prosthodontics
- ▶ Clinical applications in restorative dentistry
- ▶ Clinical applications in orthodontics
- ▶ Clinical applications in periodontology
- ▶ Microbial colonization of FRCs and resin-based materials
- ▶ Biocompatibility of FRCs
- ▶ Bonding characteristics and techniques used for FRCs
- ▶ Other biomedical applications of FRCs

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/bmri/biomaterials/frcd/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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