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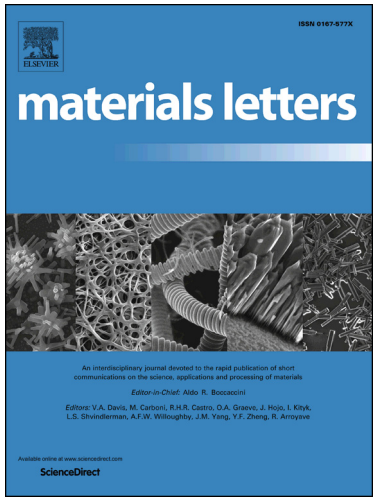

Development of hydroxyapatite-reinforced biocomposites based on polymerizable multifunctional strontium containing inorganic-organic hybrid resins for biomedical applications

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Abstract

Novel bioactive inorganic-organic hybrid resin containing alkoxide of strontium with polymerizable tetramethacrylate groups was synthesized using a simple single-pot modified sol-gel preparation. The objective of the study is to investigate the feasibility of developing biomaterials using the synthesized inorganic-organic hybrid resin with non-silanated hydroxyapatite/quartz as filler. Photocured polymeric composite [Sr-HAP] fabricated from novel bioactive strontium containing resin showed lower polymerisation shrinkage, good diametral tensile strength, flexural strength with good cell viability and cell adhesion.

Key words: bioactive, inorganic-organic hybrid resin, sol-gel preparation, biomaterials, hydroxyapatite, polymeric composite.