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Paper Title: Synthesis and Characterization of Silver -doped Hydroxyapatite-Coated Polyether ether ketone for Dental Applications

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Abstract

The main objective of this paper is to develop and characterize silver-doped hydroxyapatite (Ag-HA) coating on Polyether ether ketone (PEEK). The physicochemical characteristic of Ag-HA coated on PEEK was evaluated by X-ray diffraction (XRD) analysis, Fourier transform infrared spectroscopy (FTIR), and also determining calcium (Ca) / phosphorus (P) ratio and silver (Ag) / calcium (Ca) ratio by inductive coupled plasma atomic emission spectroscopy (ICP-AES). The surface morphology of Ag-HA coated on PEEK was analyzed by scanning electron microscopy (SEM). XRD, FTIR, and ICP-AES analysis of the coated layer confirms Ag-HA deposition on PEEK, the silver successfully substitutes calcium (Ca) in the hydroxyapatite (HA) lattice. The silver (Ag) substitution is not 100 % as compared with the initial added silver (Ag). Surface morphology analysis of Ag-HA-coated PEEK reveals the flake structure of Ag-HA formation on PEEK.
