

عنوان مقاله:

EFFECT OF TiO₂ ADDITION ON BONDING STRENGTH OF CaO-P₂O₅ Na₂O-TiO₂ BIOACTIVE GLASS CERAMIC COATING

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خلاصه مقاله:

The effect of titanium dioxide addition on bonding strength of CaO-P₂O₅-Na₂O-TiO₂ glass-ceramic system was investigated as a coating on titanium substrate. Thus, different amounts of TiO₂ (۲, ۳.۵ and ۵ mol %) were added to the base glass batch composition. The prepared glaze slips were applied on the substrate by dip coating method, dried and then heat treated at various temperatures. After that, bonding strength of the glass-substrates was determined via shear stress testing method. The de-bonded interfaces were analyzed by scanning electron microscopy (SEM). According to these results, the ۵ mol% TiO₂ containing coating showed the best bonding strength, comparing with the other coatings. The bioactivity of the coated samples was investigated by soaking them in simulated body fluid (SBF). The surface of the samples was studied using SEM and X-Ray microprobe and it was observed that an apatite layer was grown on their surface

کلمات کلیدی:

Titanium, Bioactive Coating, Bonding Strength

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