B-3

The study of hydroxyapatite coating on Titanium (ECAP) and Titanium alloys using a sol-gel derived precursor

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A comparative study of the hydroxyapatite coating using a sol-gel derived precursor on ECAP-Ti and different grades of titanium alloys (Ti-0.2%Fe, Ti-0.5Fe%, Ti-2%Fe, GR-1, GR-4) is been done. The precursors are made by mixing Ca(NO3)2 .4H2O and (C2H5O)3PO in 2-methoxy Ethanol. The samples are dip coated in the prepared sol-gel. Later, they are dried at 200 C and calcined rapidly at 400 C for 2 min. This process is repeated till a 4-layer coating is obtained. These layers of coating are compensated by calcining rapidly at 600 C for 2 min. The present study is to find a suitable implant that can be coated with hydroxyapatite having good bonding strength using sol-gel process. ECAP-Ti has been a promising implant material in this regard. ECAP-Ti having good mechanical strength compare to Cp-Ti is expected to show good bonding strength of hydroxyapatite coating over the substrate.