

Development of dense hydroxyapatite-ni by modified electroless deposition technique

Abstract

Ni deposited on HA powder was prepared by electroless plating process without sensitization and activation treatment. The deposited powder obtained was characterized by energy dispersive spectroscopy (EDX) and x-ray diffraction (XRD). The microstructure and hardness of the sintered powder were examined by scanning electron microscopy (SEM) and Vickers hardness respectively. From the result, the nickel existence in the deposition was confirmed by the EDX analysis. The diffraction peaks at 44.5 and 64.7° (2θ) of planes (111) and (211) respectively were belong to nickel. Nickel are homogeneously dispersed in HA matrix with grain size between $0.25\text{-}2\mu\text{m}$ after sintered at 1250°C . The improvement of 93% and 180% in average hardness and flexural strength respectively were achieved with nickel presence in HA compared to pure HA.

Keywords; Adsorption, Deposition, Electroless, Hydroxyapatite (HA), Nickel