

عنوان مقاله:

Investigation of mechanical properties of Mg-micro/nano HA composite fabricated by powder metallurgy

محل انتشار:

کنفرانس بین المللی مهندسی و علوم کاربردی (سال: 1394)

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خلاصه مقاله:

In this study, Hydroxyapatite powder was synthesized in micro and nano scale, using wet chemical precipitation method. Magnesium-Hydroxyapatite composites were prepared by pure Magnesium and synthesized Hydroxyapatite powders employing powder metallurgy method. The effect of particle size and Hydroxyapatite concentration on microstructure and mechanical behavior of composites were investigated. In the presence of Hydroxyapatite, a significant improvement was seen in the mechanical properties. The mechanical properties and the HA distribution were better in the nano-scale composites than the micro-scale, probably due to the higher surface to volume ratio. The composite with 3 wt. % nano-Hydroxyapatite showed optimum mechanical properties, with 80.88 V hardness, and 131.52 MPa Ultimate shear stress. Hydroxyapatite particles strength the grain boundaries which result in improving the mechanical properties of composites

کلمات کلیدی:

Magnesium; Hydroxyapatite; Powder metallurgy; Metal matrix composite; Mechanical properties

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