

Synthesis and characterization of pure magnesium/bio-glass composite

Abstract

In this study, bio-glass 45S5 powder was added to pure magnesium powder to produce the magnesium/bio-glass composite by powder metallurgy method. The composite was synthesized based on 5 wt. %, 10 wt. % and 15 wt. % of bio-glass. The composite was investigated from the point of view of its microstructure, physical properties and in-vitro bioactivity. Microstructural analysis showed that bio-glass was agglomerated with increasing content of bio-glass. Density and hardness of composite increased as the content of bio-glass increased. During in-vitro test, corrosion resistance increased as the content of bio-glass increased.

Keywords

Bio-glass; Composite; In-vitro; Magnesium; Powder metallurgy; Sintering