

Influence of Fiber's Volume Percentage on Elastic & Acoustic Properties of BMGS Composites for Biomedical Applications

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Abstract:

The influence of reinforcement volume fraction, Λ_f , on densities and elastic modulus of $Zr_{41.2}Ti_{13.8}Cu_{12.5}Ni_{10}Be_{22.5}$, Vit.1, bulk metallic glass, reinforced with Zr, Ag, Au and Cd metals has been investigated. For all studied composites, densities increase with increasing fiber volume percentage while Young's and shear modulus decrease. We were able to deduce a relation between densities, elastic modulus and reinforcement volume fraction. Moreover, Vit.1 composites acoustic parameters were determined as function of reinforcement volume fraction.

Keywords: *Elastic constants, composite, reinforcement volume fraction, BMG' matrix, acoustic parameters*