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Effects of cow bone filler on the microstructure and mechanical properties of recycled polyethylene/cow bone particulate composites

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Abstract

The morphology and mechanical properties of cow bone reinforced polyethylene composite was evaluated to assess the possibility of using it as a new material for engineering applications. Cow bone reinforced matrix composite was prepared from low density polyethylene matrix containing up to 25% cow bone fillers and the effect of the filler on the mechanical properties of the composite was investigated. Scanning electron Microscopy (SEM) of the composites (with 0-25% filler) surfaces indicates good interfacial interaction between the bone fillers and the low density polyethylene matrix. The tensile strength and the hardness of the composite increases with increase in filler content while the impact strength and rigidity of the composite decreases with increase in the filler content. © 2012 Advanced Engineering Solutions.

Author Keywords

Cow bone; Mechanical properties; Microstructure; Polyethylene

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