Pre-treatment by water retting to improve the interfacial bonding strength of sugar palm fibre reinforced epoxy composite

ABSTRACT

The surface treatment of sugar palm fibres by a water retting process in which the fibres were subjected to prolonged immersion in sea water, pond water and sewage water, and the characterisation of their surface morphology before and after treatment by SEM, is described. The effects of fibre pre-treatment on the mechanical properties of composites with epoxy resin were investigated by tensile and flexural strength measurements and SEM analysis of fracture surfaces, and the results are discussed in terms of fibre-matrix interfacial bonding strength. 12 refs.

Keyword: Natural fibre; Polymer composites; Surface modification; sugar palm fibres; Epoxy