

Effect of fibre length and sea water treatment on mechanical properties of sugar palm fibre reinforced unsaturated polyester composites

ABSTRACT

This study presented the effect of different fibre length and seawater treatment on mechanical properties of the fabricated composites. The composite was reinforced with fixed 30wt.% of fibre loading. Sugar palm was treated using sea water for 30 days and have been cut into three different lengths by 5cm, 10cm and 15cm. The mechanical properties of the untreated and treated fibre with different fibre length composites were characterised includes tensile test and flexural test. Treated sugar palm fibre composites with 15cm fibre length exhibited higher tensile strength at 18.33 MPa. However, it shows the lowest value for the tensile modulus at 4251.96MPa. The flexural strength shows an increasing trend as the fibre length increased up to 15cm and the maximum flexural strength was exhibited by treated sugar palm fibre with 5 cm at 80.80MPa.

Keyword: Sugar palm fibre; Seawater treatment; Unsaturated polyester; Mechanical properties