Fracture Properties Investigation of Artocarpus odoratissimus Composite with Polypropylene (PP)

ABSTRACT

Wood plastic composites (WPC) were done using a matrix of polypropylene (PP) thermoplastic resin with wood fibre from Artocarpus odoratissimus as filler. The purpose of this study is to investigate the fracture properties of Artocarpus odoratissimus composite with PP. The WPC was manufactured by a hot - press technique with varying formulations which are 10:0 (100% pure PP), 50:50 (40 g of wood fibre and 40 g of PP) and 60:40 (48 g of wood fibre and 32 g of PP). The mechanical properties were investigated. Tensile and flexural were carried out according to ASTM D 638 and ASTM D 790. The results were analysed to calculate the tensile strength. Tensile strength at break is ranged from 13.2 N/mm2 to 21.7 N/mm2 . While, the flexural strength obtained is varying from 14.7 N/mm2 to 31.1 N/mm2 . The results of the experiment showed that tensile and flexural properties of the composite increased with the adding of wood fibre material. Finally, the Scanning Electron Microscope (SEM), have been done to study the fracture behaviour of the WPC specimens.