

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

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Abstract : Wood plastic composites (WPC) were made using matrix of polypropylene (PP) thermoplastic resin with wood fiber from Artocarpus Odoratissimus as filler. The purpose of this project is to investigate the fracture properties of Artocarpus odoratissimus composite with PP. The WPC were manufactured by hot-press technique with varying formulations which are 10:0 (100% pure PP), 50:50 (40 g of wood fiber and 40 g of PP) and 60:40 (48 g of wood fiber 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 were increased with the adding of wood fiber material. Finally, the Scanning Electron Microscope (SEM), have been done to study the fracture behavior of the WPC specimens.

Keywords : Artocarpus odoratissimus, polypropylene thermoplastic, wood fiber, WPC

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