Influence of Pandanus Tectorius Leaf Fiber on Mechanical Properties and Morphology of Polypropylene Composite

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Abstrak

ABSTRAK
Natural fiber reinforced polymer composites are widely developed because of their relative low price and eco-friendly. One of natural fiber sourches is pandanus tectorius leaf. This study aimed to determine the effect of variations in fiber volume fraction on tensile strength, impact strength, bending strength and morphological on sea pandanus fibers- polypropylene composites.Tensile test spesimen refer to ASTMD 638, impact test spesimen refes to ASTMD 5942-96, bending test spesimen refer to ASTMD 790 -02. The increasing of the volume fraction increased the tensile strength and impact strength. The tensile test results showed the highest tensile strength results for composites with a volume fraction of 35% was 25.82 MPa. The impact test results showed that the highest impact strength was obtained in the 35 % volume fraction of 0.0062 Joule/mm2. The bending test results showed that the highest bending strength was obtained in the 20% volume fraction of 24.96 MPa. Based on SEM test results, there were voids, cracks, fibers pull out on the composite.