**Abstract**

**Mechanical Behavior Analysis Randu Kapok Fiber Composites Using Polyester Matrix**

**By**

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Developments in science and technology in the field of materials engineering and environmental issues requires new breakthroughs in the provision of high quality materials and environmentally friendly. Nonmetallic materials Composite especially natural fibers that are more lightweight, malleable, corrosion resistance, low price and easy to obtain. Research objective is to determine the mechanical properties of the kapok fiber composites using polyester resin with tensile and bending strength measurements.

In this study the use of materials such as polyester resins, fibers Kapok Randu and catalysts, as well as using tools such as mold, ruler, kit, cutter, measuring cups and others. Randomly arranged fibers in composites with various volume fractions of 15%, 25%, 35%. Making way press mold, bending tests were conducted with a reference standard ASTM D 790-02, tensile testing with the standard ASTM D-638.

Greatest tension obtained in the composite with 35% volume fraction is equal to 3,8046 MPa while the largest bending strength of the composite obtained from volume fraction 15% at 84 MPa. Void formed causing the load can be held by the matrix is reduced due to lack of homogenan specimens. The reduced strength of the composite can be caused by uneven distribution of fibers in each place so that the energy absorbed becomes smaller when compared to the other side.

Key Words: Composites, Kapok fibers, polyester, mechanical strength, tensile and bending tests.