

# **Mechanical Properties of Screw Pine (*Pandanus Odoratissimus*) Fibers-Unsaturated Polyester Composites**

## **Abstract**

Interesting fibers researched was taken from leaves of screw pine plant of species *Pandanus Odoratissimus* (PO fibers). In this research, effect of alkali treatments for various soaking time and effect of fiber content on mechanical properties of unsaturated polyester matrix composites was studied. Both cross-section area and moisture absorption of individual PO fibers before and after treatment with 5% NaOH solution for various soaking times show changing. The cross section area decreases continuously, since PO fibers were treated for long time. Untreated PO fibers has the highest moisture absorption and PO fibers treated by the longest soaking times has the lowest one. PO fibers treated by longest soaking time displays the largest damage of the fiber structure. PO fiber treated by various soaking time in 5% NaOH for 90 minutes gives effect significantly on increasing tensile strength and tensile modulus of polyester composite. Effect of various PO fiber content on mechanical properties of composite was also shown in this research. Fibers content of 40% displayed maximum tensile strength of composite. From observation with scanning electron microscope (SEM), some conditions of fracture surface of the composite was obtained.

**Keyword:** Composites