

## **MECHANICAL CHARACTERISATION OF FLAX AND SISAL FIBER REINFORCED POLYMER COMPOSITES FOR WIND TURBINE BLADES**

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### **ABSTRACT**

The wind turbine is a device that converts kinetic energy from the wind, into electrical power. Among all the parts of a wind turbine such as blades, hub, gear box, nacelle, and tower; nacelle and wind turbine blades are generally made up of glass fibers and carbon fibers, for better strength, low weight, and corrosion resistance. The main limitations of these materials are the availability, non biodegradable, health hazardous and their fabrication cost. Hence, the aim of this research is to replace these materials with natural fibers.

In this research work, application of natural fibers reinforced polymer composites in wind turbine, requirements to the composites, their properties, constituents, manufacturing technologies, and defects will be reviewed; promising future directions of their developments also will be discussed.

**KEYWORDS:** Multiaxial Reinforcement, Natural Fibers, Polymers, Synthetic Fiber, Wind Turbine Blades