## The effect of silane treated fibre loading on mechanical properties of pineapple leaf/kenaf fibre filler phenolic composites

## **ABSTRACT**

The aim of the present study is to investigate mechanical and morphological properties of pineapple leaf fibres (PALF) reinforced phenolic composites and its comparison with kenaf fibre (KF)/phenolic composites. Mechanical properties (tensile, flexural and impact) of untreated and treated PALF phenolic composites at different fibre loading were investigated. Tensile, flexural and impact properties of PALF and kenaf/phenolic composites were analyzed as per ASTM standard. Morphological analysis of tensile fracture samples of composites was carried out by scanning electron microscopy. Obtained results indicated that treated PALF/phenolic composites at 50% PALF loading exhibited better tensile, flexural and impact properties as compared to other untreated PALF/phenolic composites. Treated kenaf/phenolic composites at 50% fibre loading showed better tensile, flexural and impact properties than untreated kenaf/phenolic composites. It is concluded that treated 50% fibre loading kenaf and PALF/phenolic composites showed better mechanical properties than untreated kenaf and PALF/phenolic composites due to good fibre/matrix interfacial bonding. Results obtained in this study will be used for the further study on hybridization of PALF and KF based phenolic composites.

**Keyword:** Pineapple leaf fibres; Kenaf fibres; Phenolic composite; Mechanical properties; Morphological properties