**Finite Element Analysis of Mechanical Properties of Composite Material Reinforced by Aluminium-Synthetic Fibers**

**Abstract:**

Composite materials are engineering materials made from two or more constituent materials that remain separate and distinct on a macroscopic level while forming a single component. In this work the mechanical properties of GFRP (glass Fiber Reinforcement Plastic), Nylon and their composite with aluminium were evaluated with reference to ASTM D638-02 a. During the tensile load, the maximum strain, and stress are obtained. The maximum strength is found in composite GFRP instead of Aluminium and composite Nylon. Composite material has shown an improvement of mechanical properties when compared with individual materials.

Keywords: Composite Material, GFRP, tensile load, ASTM.