

FABRICATION AND CHARACTERIZATION OF ETHIOPIAN WOVEN PALM FABRIC REINFORCED EPOXY COMPOSITE

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ABSTRACT

Increasing environmental pollution and lack of resources has resulted in great interest of research in materials that are friendly to our health and environment. Polymer composites produced from natural fibers is currently one of the most promising areas in polymer industry. Keeping in view the various advantages of natural fibers, in current series of green composites a study on natural fiber reinforced polymer composites has been made. This study describes an investigation on the use of a new composite construction material composed of Epoxy and palm fibers, having some properties potentially useful in technical domains. First, optimize epoxy resin is reinforce with employing palm fiber of traditional woven mat. Second, the new palm fiber composite and pure epoxy will be manufactured using vacuum bagging assisted hand lay-up techniques. Then, experiment is conducted on the new proposed composite material. Experimental results of tensile test, three point bending test, compressive test, thermal insulation, Scanning Electron Microscope (SEM) and impact test has been demonstrated and discussed in this study. These results are suggesting that palm fiber can be potential candidates for use in natural fiber reinforced composite and is intended to improve its mechanical, physical, and thermal insulation properties when compared to pure Epoxy resin

Keywords: Woven Palm fabric, epoxy resin, Composite, Mechanical properties.

