



ChemTech

International Journal of ChemTech Research

CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.9, No.05 pp 932-940, 2016

Influence of Weight Fractions on Mechanical, Water Absorption and Corrosion Resistance Behaviors of Untreated Hybrid (Coir/Banana) Fiber Reinforced Epoxy Composites

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Abstract : In today's world, the focus is towards alternate material sources which are environmentally acceptable and biodegradable in nature. Out of those materials, composite materials field is rapidly increasing in engineering. Due to low cost, light weight and biodegradable properties, natural fiber reinforced composites are employed. Therefore, the current work addresses the influence of weight fractions on mechanical, corrosion and water absorption behaviors of untreated coir-banana hybrid fiber reinforced epoxy composites. Here, epoxy resin – araldite LY556 and hardener – araldite HY951 were used as a matrix material. According to ASTM standards and by using hand lay-up technique, the specimens were made with the weight fractions of 0/40, 15/25, 20/20, 25/15 and 40/0 of coir/banana fibers, and maintaining constant fiber length of 5mm. It has been noted that, the tensile and impact strength of hybrid combinations were greater than the pure banana composite. Scanning electron microscope was done on those samples, to ascertain the mode of failure.

Keywords: Fiber, Coir, Banana, Hybrid, Composites, Epoxy, Hardener.

Arun A S *et al* /International Journal of ChemTech Research, 2016,9(5),pp 932-940.
