

Influence of Chemical Treatment on Tensile, Bending and Water Absorption Behavior of Banyan/Banana Fibers Reinforced Hybrid Composites: An Experimental and FEA Investigation

Prabhakar C. G¹, Ranganath K J² and Dr. Sreenivas Reddy³

Department of Mechanical Engineering

Sha-Shib College of Engineering and Technology, Bengaluru, India^{1,2}

R L Jallappa Institute of Technology, Bengaluru, India³

prabhu_cg8055@yahoo.in, rangamech@gmail.com, sreenivasam123@gmail.com

Abstract: *The Usage of Natural fibers based composites leading to high priority in the present industries is due to their property benefits over synthetic fibers. it is Because of completely biodegradable the banyan and banana fibers were used in the present work. The paper deals with experimental and FEA testing of tensile and bending behavior of Banyan (B) and Banana (Ba) reinforced composites with different volume fractions such as 25B/25Ba, 30B/20Ba and 35B/15Ba with 50% of epoxy resin. The hybrid composites with treated by 5% NaOH solution have better results compare to untreated fiber composites, with volume fraction of 30% Banyan fibers and 20% Banana fibers (30B/20Ba) gives higher Tensile and Flexural properties for both treated and untreated fibers composites compare to other volume fraction composites. The maximum tensile and bending strength was found in 30B/20Ba volume fraction, 63.37MPa and 67.07 MPa respectively for treated fibers composites, water absorption increases with increase in duration of immersion in composites up to 144 hrs*

Keywords: natural fibers, Banyan and Banana fibers, water absorption

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