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Synthesis and analysis of natural fibers reinforcement of synthetic resins

Kranthi Kumar Guduru, Ratnakar Pandub, Shankar Banothuc and K Vinnayac
Chtistu Jyothi Intitute of Technology and Science, India

Hybrid composites typically have a fiber or particle phase that is stiffer and stronger than the continuous matrix phase and serve as the principal load carrying members. The matrix acts as a load transfer medium between fibers, and in less ideal cases where the loads are complex, the matrix may even have to bear loads transversed to the fiber axis. In this research, the comparative synthesis and analysis of kenaf fiber and polymer fibers are treated with NaOH solution and the fibers are properly reinforced with polypropylene resin and epoxy resin respectively in a matrix form to prepare hybrid composite laminates of 6 mm thicknesses. Thereafter work is done to determine the mechanical properties like flexural strength or flexural modulus, tensile strength, tensile modulus and compressive strength with suitable specimens with ASTM standards. The anlysis is done in the Ansys 10.0 for various load and result factors. So the matrix also serves to protect the fibers from environmental damage before, during and after composite processing. When designed properly, the new combined material exhibits better strength than each individual material. Composites are used not only for their structural properties, but also for electrical, thermal, and eco-friendly environmental applications.

Biography

Kranthi Kumar Guduru is a Assistant Professor in Mechanical Engineering department at Chtistu Jyothi Intitute of Technology and Science-Warangal, India. He has a PhD degree along with a Master of Technology in CAD/CAM. He also has 5 years of teaching experiance, is life member of Indian society for technical education, published 10 papers in international conferences and journals including IIT-Roorkee and IIT-Madaras in the area of materials and metallurgy, designed one experiment in thermal engineering and has the knowledge of computer programming used in his research work. His research work is mostly on natural fiber composite which are eco friendly and easily biodegradable in manufacturing.

kranthijts1@gmail.com

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