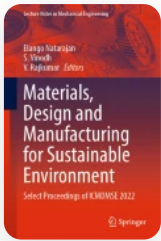


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# Experimental Investigations of Composite Material Using Bamboo Fiber Reinforced with Polypropylene Plastic Additives

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## Materials, Design and Manufacturing for Sustainable Environment

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## Abstract

Our day-to-day life necessities of human life cannot imagine the world without composites. As necessity is the mother of invention, expectation increases day by day and the necessity also increases which ultimately gives rise for continuous research for attaining the expected result. The synthetic composite fibers are replaced by fiber-reinforced polymer composite material because of their properties and abilities. This happened due to the dominance in the properties similar to non-toxic, non-abrasive, cost efficiency and easily availability. When we come into the comparison of synthetic material with natural fiber there have been increased in mechanical properties similar to tensile strength and tensile modulus, but particular properties similar to specific gravity and specific tensile modulus will also meet the expectation for the properties needed. We mixed epoxy resin with bamboo along with polypropylene plastic and NaOH to improve its properties. The experimental characterization was studied in this research. We observed that the Composite 3 has higher tensile strength than other two composites. Significantly, Composite 2 has higher compression strength. Composite 1 has higher hardness and significantly better in both tensile and compressive strength.

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