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Fabrication of Jute Coir Fiber and Resinnatural Composites by using Hand Layup Method

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Abstract: *In this project, epoxy resin composites were fabricated and tested by reinforcing them with jute fiber and wood dust using the open mould, or hand lay-up, technique. Jute fiber was chosen because it is strong, lightweight, and biodegradable, while wooddust was added to increase stiffness and make use of waste material. The composite was prepared by mixing LEPOX-12 epoxy resin with a hardener, adding the jute fiber and wood dust, and pouring the mixture into a mould to cure at room temperature. After curing, the specimens were cut and tested for mechanical properties, including tensile strength, flexural strength.The results showed that adding jute fiber improved the strength and flexibility of the composite, while wood dust helped make it stiffer and harder. Overall, this study demonstrates that jute fiber and wood dust–reinforced epoxy composites can be made easily and cheaply, and they have potential for use in low-load structural applications,suchaspanels, partitions,and interior automotive components.*

Keywords*:* Jute fiber, coir fiber, natural fiber composite, hybrid composite, epoxy (polymer) resin, hand layup method, natural fiber filler, mechanical properties, tensile strength, flexural strength, and sustainable eco-friendly materials

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