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Design, Analysis and Material Optimization of Propeller Shaft of 4 Wheeler Using Composite Material-A Case Study

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Abstract: *The Roadway vehicles like cars, buses, trucks and land movers having many mechanical parts in common like Engine parts, Propeller shafts, Gearbox, Brakes, Clutches, Wheels, etc., To make the vehicle fuel efficient which in result make the transportation economical, the weight of that vehicle should be reduced. Since the composite materials are light weight with more strength & stiffness, inclusion of composite materials to conventional steel materials used in auto parts will reduce the weight and improve the mechanical properties of those components. This Case study deals with designing the propeller shaft for its minimum dimensions to satisfy current problem specification and then replace conventional steel material with composite material..*

Keywords*:* Propeller Shaft, Composite Material, Carbon Epoxy, Glass Epoxy, SM45C, Abaqus, Solid work, Optimization, Analysis

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