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ANALYSIS OF COMPOSITE LEAF SPRING: A COMPARISON

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Abstract

Present scenario increasing competition and innovation in reducing the weight of the automobile products by maintaining the strength. Leaf springs are one of the oldest suspension components that are being still used widely in automobiles. Automobile sector leaf springs are used in suspension system and it is prepared by steel materials are replaced by composite materials due to its high strength to weight ratio, high strain energy capability. The use of the composite material in leaf spring is reducing the weight without reducing load carrying capacity and stiffness. In this work objective is to compare the stiffness and weight saving of the composite leaf spring and traditional mild steel leaf spring. Various composite materials Eglass/Epoxy, CFRP, Carbon/Epoxy, Kevlar/Epoxy and Graphite/Epoxy selected as a spring materials instead of existing conventional material. Modeling is done using solid edge and analysis is carried out by using ANSYS workbench

Author Keywords

Leaf Spring, Composite materials, ANSYS Workbench

Index Keywords

Weight ratio, energy capability, Eglass/Epoxy, CFRP, Carbon/Epoxy, Kevlar/Epoxy, Graphite/Epoxy.

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