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Design of composite leaf spring for automotive vehicle

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Reducing weight while increasing or maintaining strength of products is getting to be highly important research issue in this modern world. The suspension system in a vehicle significantly affects the behavior of vehicle i.e., vibration characteristics including ride comfort, stability etc. Leaf springs are commonly used in the vehicle suspension system and are subjected to millions of varying stress cycles leading to fatigue failure. A lot of research has been done for improving the performance of leaf spring. Now the automobile industry has shown interest in the replacement of steel spring with composite leaf spring. In general, it is found that fiberglass material has better strength characteristic and lighter in weight as compare to steel for leaf spring. In this research work the author has reviewed some papers on the design and analysis leaf spring performance and fatigue life prediction of leaf spring. There is also the analysis of failure in leaf spring. The automakers can reduce product development cost and time while improving the safety, comfort and durability of the vehicles they produce. The predictive capability of CAE tools has progressed to the point where much of the design verification is now done using computer simulation rather than physical prototype testing.

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Navigating a driverless world: Methods on implementing automated systems in developing countries

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In the recent years, there has been a tremendous advancement in the autonomous sector resulting in development of Autonomous car or driverless cars. The research paper focuses on features of this car and on its practical implementation in developing countries. The points taken into account include issues for its implementation in developing countries as they differ from that of developed countries. The paper includes security features of the car, the problems faced due to the geographical conditions among various areas as well as cultural background (social issues), high speed internet connectivity, fully mapped global terrain, ability to fetch real time traffic data through internet, non-availability of standardized road network and weather interference are the key issues that will be reviewed and their solutions suggested in this paper.

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