

Design and Analysis of a Robotic Camouflage Vehicle for Unauthorized Person Detection

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Abstract

Currently, robots play an important part in many sectors, including military application. The Frame structure is an essential element of the any robot vehicle since it supports the whole weight operating on the robot vehicle as well as other sections of the robot. As the outcomes, it has to be able to sustain shock, twist, vibration, as well as other stresses. High stress & total deformation is key performance indicator of Frame. This research is deals with optimization of the different kind of material for military operation robot vehicle on the basis of stress and maximum deformation. The ANSYS workbench is used to do static structural analysis of the Robot frame. CATIA software is used to design the robot frame. Firstly we prepare 3D model of Robot frame as per Requirement then analysis for different types of material such as Structural Steel, Aluminum Alloy & ABS Plastic and after optimization we can perform the Modal Analysis of optimized material

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