

Design and Analysis Electric Car Chassis

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ABSTRACT

The evolution of laptop aided layout (CAD) structures and associated technologies has promoted the development of software program for the ease of chassis modeling. It visualizes the principle outputs of the model, which consist in numeric information and picture elements. This reduces the simulation time dramatically and permits the optimization method to return to a success outcomes. This paper presents an electric automobile chassis layout with the aid of the use of the industrial layout software program bundle, Pro / E. The design of the chassis with adequate stiffness and electricity is the purpose of this assignment. The fabric used is moderate steel AISI 1018 with 386 MPa of yield strength and 634 MPa of closing strength. The result suggests that the essential factor of strain and displacement befell within the middle of the facet contributors in all loading conditions, most stresses are under the yield stress. The very last products for the layout have been fabricated correctly.

Keywords: *Electric car, chassis layout, seasoned / E, Stress analysis, load Analysis*

INTRODUCTION

The quests for a steady, secure, easy, environmental-friendly gas is in no way-finishing. Carbon-based fuels, consisting of fossil fuels are unsustainable and risky to our surroundings. Some of the alternatives are renewable electricity sources which encompass all gas types and electricity companies, one-of-a-kind from the fossil ones, including the solar, wind, tides, hydropower and biomass. Amongst those factors, solar electricity is preferred considering the fact that it can provide the

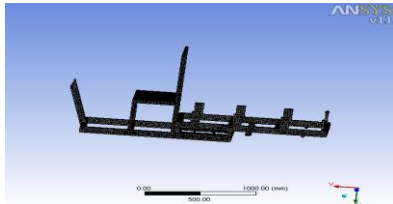
cleanest sustainable strength for the longest period of time – the following couple of billion years.

Photovoltaic production becomes double every two years, growing by way of a mean of forty eight percentage every 12 months seeing that 2002. Due to its innumerable benefits in environmental, economic and social aspects PV structures have will become the sector's quickest growing power technology. It can arguably be stated that the simplest problem to solar electricity as an strength source is our [1]expertise of growing efficient and fee powerful era that may put into effect it. Nothing in the world is free of cost, however what if we should discover a way to put in force free rides? Indeed it would be tremendous if our vehicles should continue to run with out us having to spend billions on fossil fuels each 12 months and to deal with herbal dangers that their combustion depart in the back of. If we ought to force a sun-powered car, that auto dream could come genuine. [2]Solar cars might harness energy from the sun through sun panels. A solar panel is a packaged, related meeting of solar cells, also known as photovoltaic cells that are stable kingdom gadgets that may convert solar electricity immediately into electric power through quantum mechanical transitions. They are noiseless and pollution-unfastened with no [3]rotating components and need minimum preservation. The electricity accordingly generated could then gas the battery that could run the auto's vehicles. [4]Therefore we would achieve an electrically pushed automobile that would journey on "unfastened" power and not using a

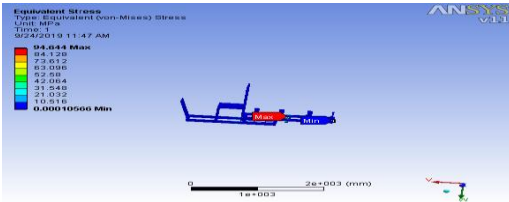
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[5] harmful emissions, which could utilize its complete energy at all speeds, and could have little or no maintenance price.

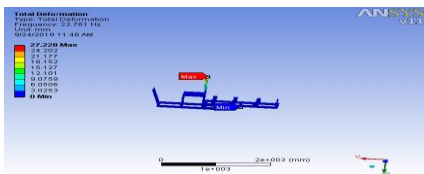
MODAL IS DRAWN:



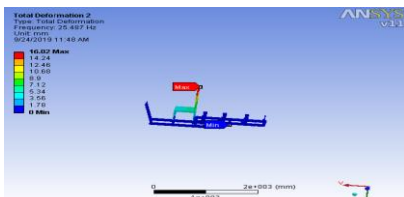
**ALUMINIUM RESULTS
EQUALENT STRESS**



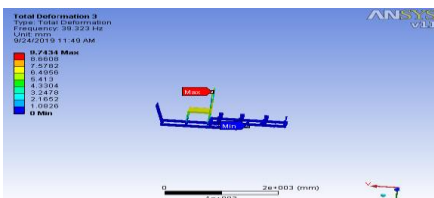
AT MODE 1



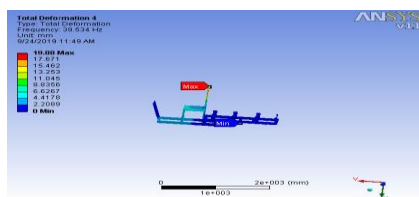
AT MODE 2



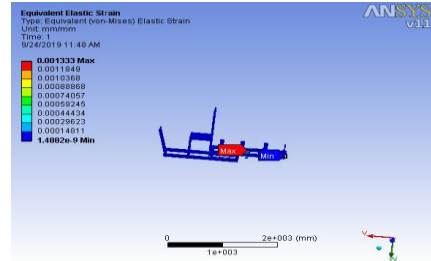
AT MODE 3



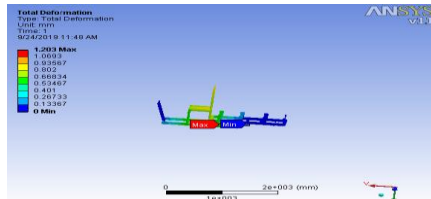
AT MODE 4



STRAIN



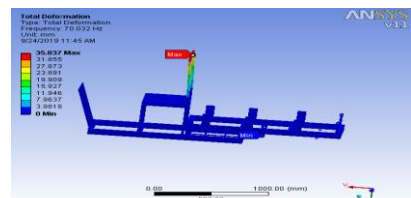
TOTAL DEFORMATION



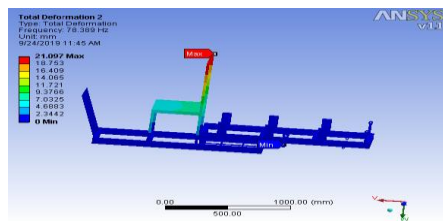
**CARBON GLASS RESULTS
EQUALENT STRESS**



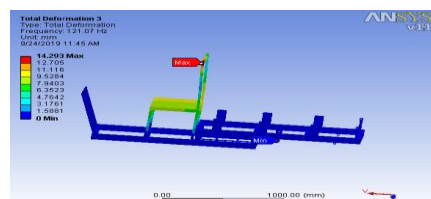
AT MODE1



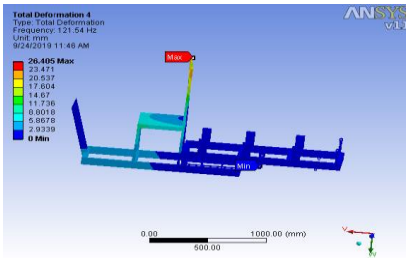
AT MODE2



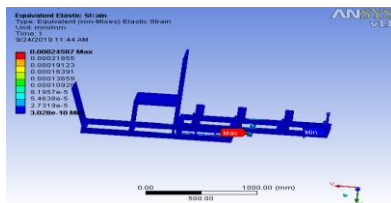
AT MODE3



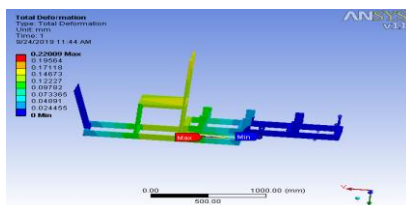
AT MODE4



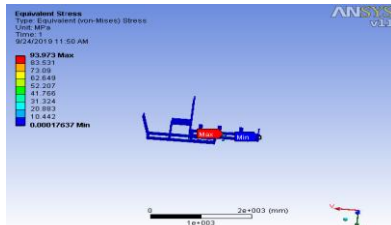
STRAIN



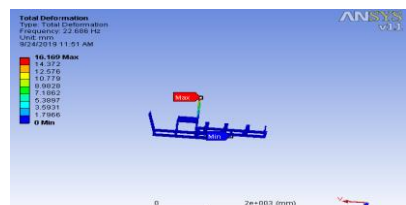
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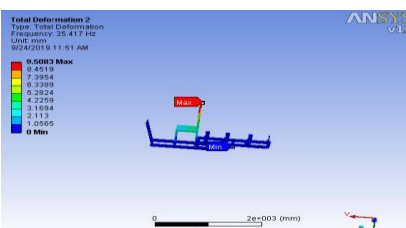
MAILD STEEL RESULTS EQUALENT STRESS



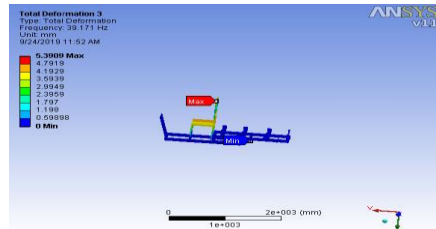
AT MODE1



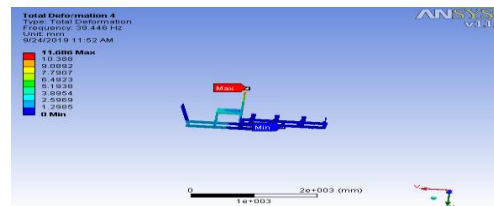
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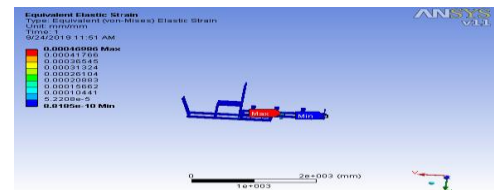
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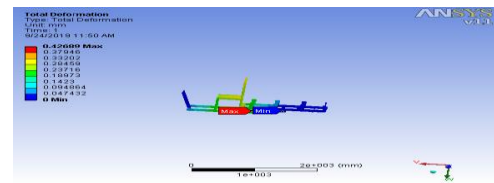
AT MODE4



STRAIN



TOTAL DEFORMATION



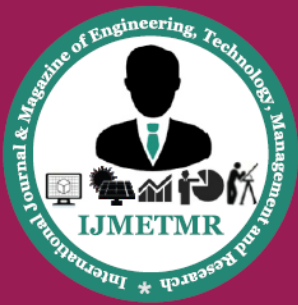
CONCLUSION AND FUTURE WORK

Following are the conclusions of the paintings

1. Stress concentration can be minimised by way of providing the rib at neck ring.
2. Quality of welding and welding joints need to be designed to lessen the failure at the joint.
3. Stress distribution ought to be uniform.
4. As in keeping with analysis, some components want to remodel for secure facet.
5. Overload elements is to be remember so one can provide more energy to the chassis.

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