MATERIAL ANALYSIS OF ELECTRIC CAR CHASSIS V2 USING SOFTWARE AUTODESK INVENTOR

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ABSTRACT

The Laksamana V2 electric car using galvanized pipe material has overdesigned the material and type of material used. This makes the V2 admiral electric car has a heavy chassis construction. This study aims to get a lighter and stronger construction material for the construction of the Admiral V2 electric car chassis. By using the Autodesk Inventor Pro 2020 software computation system with the Finite Element Analysis method. The analysis process was carried out in the Mechanical Engineering Design and Design lab at the Bengkalis State Polytechnic campus. Modeling is done by measuring the construction dimensions of the Admiral V2 electric car chassis. By analyzing the strength of construction on galvanized material, the mass value is 27.7699 kg, stress 77.7 Mpa, strain 0.0003749 ul (3749x10-4) displacement 1.5 mm and safety factor 1.0. and varying the material with the three materials used, namely stainless steel, aluminum 6061 and carbon steel. The results showed that carbon steel has a mass of 27.2494 kg with a construction strength of 77.3 Mpa stress, 3744 x10-4 strain, 1.5 mm displacement and a safety factor of 1.54.

.***Keywords:*** *Method FEA, Autodesk inventor ,materials , chassis*