Study of Design and Analysis of Motorcycle Helmet

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Abstract: *Each year, nearly 900 individuals perish from head injuries, and over 50,000 sustain severe injuries due to the absence of helmets. This paper reviews various approaches for the conceptual design of a motorcycle helmet aimed at enhancing structural comfort, visibility, and safety, while also considering adjustable interior form to accommodate the rider's ergonomics. The use of a new material called Fiberglass Reinforced Plastic (FRP) is also explored. The analysis involves the use of the simulation software ANSYS to evaluate the helmet. A maximum force of 150 N is applied to the helmet to assess its performance under static and dynamic conditions. The simulation focuses on parameters such as total deformation, strain energy, and von-Mises stress across different scenarios in static conditions*

Keywords: Motorcycle Helmet, Composite Material, Safety, ANSYS.