

Design of Rear Axle of Automotive and Fabrication using 3-D Printing Technology

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Abstract: *The design and fabrication of rear axles using 3D printing technology have gained significant attention in recent years. This study aims to explore the feasibility and advantages of utilizing 3D printing for rear axle production. The research involved designing and optimizing the rear axle using computer-aided design (CAD) software, followed by its fabrication using additive manufacturing techniques. Various considerations, such as material selection, structural integrity, and weight reduction, were considered during the design process. The 3D printing technology employed was Fused Deposit Modelling (FDM), utilizing a high-strength metal alloy. The fabricated rear axles underwent rigorous testing to evaluate their mechanical properties and performance characteristics. The results demonstrated that 3D printed rear axles exhibited comparable or even superior mechanical properties to traditionally manufactured counterparts. Additionally, the utilization of 3D printing enabled the production of complex geometries and lightweight structures, which can lead to improved vehicle efficiency*

Keywords: 3D Printing, rear axle, additive manufacturing, FDM, lightweight structure

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