

Transforming Automotive Performance: The Role of Additive Manufacturing

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Abstract : Additive manufacturing (AM) or 3D printing has been one of the emerging trends present in various industries, particularly in prototyping. This review focuses on the impact of additive manufacturing on a motor vehicle's performance aiming to investigate potential advancements to further revolutionize the way parts are manufactured. One of the most common problems faced in the automotive industry is carbon footprint emissions from motor vehicles, which was stated to be remedied by lightweight; additively manufactured parts helped reduce these emissions due to weight reduction provided by additively manufactured parts. Composed of various techniques for AM as well as materials utilized during the manufacturing process, which differ in terms of the quality and performance it provides during its application on the final product. Given this, the generative design will not be discussed in such a detailed manner because the focus will revolve around the effects on the performance of a vehicle due to additively manufactured parts.

Keywords : additive manufacturing (AM), automotive, computer aided design (CAD), generative design

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