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A Perspective: Magnesium in the Automotive and Aerospace Industries

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Abstract

Driven by the climate change issue, and the global response to it, a significant effort has been spent, over the last few decades, on the lightweight industry as it has been proven to lead to a less fuel consumption, less pollution, along with better drivability and performance. In this regard, Magnesium is considered to have an excellent potential as it is one of the lightest structural metals offering great weight saving. However, due to a number of technical and commercial obstacles, Magnesium has not been promoted effectively on a wide scale. Therefore, a good deal of research is needed to overcome these barriers, aiming towards bigger involvement of Magnesium in Automotive and Aerospace industries.

In this research, the viability of using Magnesium alloys in structural components in automotive industry is investigated by exploring the crashworthiness behaviour for different metals under different loading conditions. The effect of thickness increase on the absorbed energy and the material weight will be covered. A proposal on how to effectively measure crashworthiness for Magnesium and how to improve its behaviour in energy absorption is described.

Gain access to further research on this subject and more by signing up for the Magnesium Symposium on 20th July.