

## **An Overview on Aluminum Matrix Composites: Liquid State Processing**

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**Abstract :** Modern composite materials are increasingly being chosen in replacement of heavier metallic material systems within many engineering fields including aerospace and automotive industries. The increasing push towards satisfying environmental targets are fuelling new material technologies and manufacturing processes. This paper will introduce materials and manufacturing processes using metal matrix composites along with manufacturing processes optimized at Alvant Ltd., based in Basingstoke in the UK which offers modern, cost effective, selectively reinforced composites for light-weighting applications within engineering. An overview and introduction into modern optimized manufacturing methods capable of producing viable replacements for heavier metallic and lower temperature capable polymer composites are offered. A review of the capabilities and future applications of this viable material is discussed to highlight the potential involved in further optimization of old manufacturing techniques, to fully realize the potential to lightweight material using cost-effective methods.

**Keywords :** aluminium matrix composites, light-weighting, hybrid squeeze casting, strategically placed reinforcements

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