

Review of Stir Casting Technique and Technical Challenges for Ceramic Reinforcement Particulate and Aluminium Matrix Composite.

Abstract

Ceramic metal composites are promising advanced materials compared to conventional materials due to special properties such as: low weight, low cost, wear resistance, corrosion resistance, and high strength, etc. Stir casting is one of the lowest costs and simplest ways of making aluminium matrix composites. The main limitations of stir casting are poor distribution with combination of the reinforcement ceramic particles (agglomerations) in the metal matrix, porosities in composites during fabrication, and wettability of ceramic particles with molten metal's. Enhancement of stir casting parameters for Ceramic-Metals Matrix Composites (CMMCs) is the main objective for many studies. In this paper, the stir casting process will be discussed in detail with parameters affecting the homogeneous distribution of reinforcements, porosities in composites during fabrication, and the mechanical properties of the ceramic metal matrix composites.

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Malek ALI, (2020), Review of Stir Casting Technique and Technical Challenges for Ceramic Reinforcement Particulate and Aluminium Matrix Composite, Journal of Silicate Based and Composite Materials.