Influence of ultrasonic assisted stir casting on mechanical and tribological properties of Metal Matrix composites.

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Abstract

Owing to the peculiar properties of metal matrix composites (MMCs), these have found a wide range of applications in automotive and aerospace industries. Different reinforcements are employed in MMCs to achieve desirable combination of properties. Micro sized particle reinforcements in MMCs are economical and disperse easily during fabrication. Different methods are employed for the production of micro sized particle reinforced MMCs viz. powder metallurgy, high energy ball milling, sputtering, and stir casting etc [1]. Out of all these methods, stir casting is considered to be most productive and economically viable. However, long stir time is required to obtain uniform distribution of reinforcing particles. This usually results in too much oxidation of the metal matrix [2].
Recently, ultrasonic treatment is used to uniformly distribute reinforcing particles[3]. Unlike conventional stir casting, short semi-solid stir time is needed in stir casting assisted by ultrasonic treatment [2]. This paper attempts to review the influence of ultrasonic assisted stir casting method on the mechanical and tribological properties of metal matrix composites.

References:
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