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A REVIEW ON FABRICATION OF ALUMINIUM ALLOY BASED METAL MATRIX NANO COMPOSITES THROUGH ULTRASONIC ASSISTED CASTING

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ABSTRACT

Nanotechnology is spreading in the various demanding fields of engineering and medicines like electronics, defence, aerospace, energy, materials, environment, biotechnology, chemistry, information technology and communication. It created development of new generation nano materials with advanced features and wide range of their applications. Addition of submicron or nano sized particles with aluminium matrix yields superior mechanical and physical properties and changes morphology and interfacial characteristics of nano composites. Aluminium metal matrix composites reinforced by nano particles are very promising materials, suitable for a large number of applications. A wide range of research has been done on the implementation of processing methods. Recently, ultrasonic assisted casting method is used for the production of aluminium alloy based metal matrix reinforcing with nano ceramic particles. In which the formation of clusters were minimized and the nano reinforcements were distributed uniformly in the liquid state aluminium metal matrix composite. The ultrasonic assisted casting process can control the grain size by minimizing agglomeration of nano particles and retaining the enhanced microstructure. This paper reviews the properties and morphology of aluminium based metal matrix nano composites fabricated through ultrasonic assisted casting process.

KEYWORDS: Metal Matrix Composite, Mechanical Properties, Aluminium, Nano-Reinforcements, Ultrasonic Assisted Casting

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