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# Studying the Influence of Stir Cast Parameters on Properties of Al6061/Al2O3 Composite

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**Abstract :** Aluminum matrix composites (AMCs) refer to the class of metal matrix composites that are lightweight but high performance aluminum centric material systems. The reinforcement in AMCs could be in the form of continuous/discontinuous fibers, whisker or particulates, in volume fractions. Properties of AMCs can be altered to the requirements of different industrial applications by suitable combinations of matrix, reinforcement and processing route. This work focuses on the fabrication of aluminum alloy (Al6061) matrix composites (AMCs) reinforced with 5 and 3 wt% Al2O3 particulates of 45µm using stir casting route. The aim of the present work is to investigate the effects of process parameters, determined by design of experiments, on microhardness, microstructure, Charpy impact strength, surface roughness and tensile properties of the AMC.

**Keywords :** aluminium matrix composite, Charpy impact strength test, composite materials, matrix, metal matrix composite, surface roughness, reinforcement
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