

## PRODUCTION & CHARACTERIZATION OF AL 2024-SiC<sub>p</sub> METAL MATRIX COMPOSITE USING STIR CASTING

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### ABSTRACT

*The substantial use of aluminum reinforced with silicon carbide composites in various structural applications has led to the need of finding a efficient technical production techniques for these composites. Uniformity, machinability and intra-grain reactions of the constituents represent the most problems related to these composites. Production of uniform and strong components made from aluminum-silicon carbide composites can be achieved with the help of stir casting. Metal Matrix Composites (MMCs) have developed a high interest in modern times for potential applications in aeronautical and automobile industries. Achievement of a uniform distribution of reinforcement in the matrix is difficult and it has direct effect on the properties of the composite. Present thesis attempts to develop aluminum based silicon carbide particulate Metal Matrix Composites. Aluminum (Al2024) has been chosen as matrix and SiC (320-grit) as reinforcement material. Trials are done by changing the weight fraction of SiC (10% &15%), while other parameters are kept constant. An increase in hardness and strength has been observed with the increase in weight percentage of SiC. The results were further justified by comparing with other investigators.*

**KEYWORDS:** Stir Casting, Microhardness, Light Optical Microscopy, SEM-EDS, XRD

**Received:** Jan 16, 2016; **Accepted:** Jan 21, 2015; **Published:** Jan 30, 2015; **Paper Id.:** JMPEJUN20161