COPRECIPITATION METHOD FOR COATED SiC PARTICLE OXIDATED OF Al/SiC COMPOSITE

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Abstract
Metal Matrix Composites Al/SiC were made by powder metallurgy process, using Aluminum powder as matrix and Silicon Carbide as reinforcement. In this research SiC was coated with spinel (MgAl$_2$O$_4$) by coprecipitation method. Before coating process SiC was oxide by heating at temperature 900ºC and holding time of 4 hours. Al/SiC composite were varied in volume fraction of SiC are 5, 10, 15, and 20%. Sintering process were varied themperature 550ºC, 600ºC, and 650ºC. Characterization and identification of the composite involve density, hardness, elastic modulus, and microstructur using by SEM and EDX and XRD. The research have shown that spinel phase MgAl$_2$O$_4$ which successfully superimposed at SiC reinforced to yield distribution of SiC reinforcement which more homogeneous and becomes medium binder between matrix aluminum and SiC reinforcement. The highest elasticity modulus (129,21 GPa) of composite in composite 20% SiC, 650ºC themperature sintering and the highest hardnees (24,43kg/m$^2$).

Keyword: Al/SiC composite, coprecipitation, volume fraction.