

## عنوان مقاله:

Influence of Mg Addition on Microstructural Characteristics and Fracture Toughness of A356/SiCp Composite Castings

## محل انتشار:

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## خلاصه مقاله:

This study aimed at investigating the microstructural characteristics and fracture toughness of A356/10 vol.% SiCp composite casting in the presence of Mg. Toward this end, Al-A356 alloy melted in an electrical furnace, and after that the addition of SiC particles was performed in a specific sequence. The samples were prepared via the stir casting technique. In order to increase the wettability of SiC particles to the matrix, a higher Mg loading was incorporated within the melt mixture. The results showed that the fracture toughness of the composite was significantly reduced compared to the base alloy. Microstructural examination showed that the gas holes, inclusions, cracks and clustering of particles were the reasons for the decline in the fracture toughness. Addition of 1 wt.% Mg increased the wettability of SiC particles to the matrix and it would be very effective in a good dispersion of SiC particles and enhancing the fracture toughness of resultant sample.

## کلمات کلیدی:

A356/SiC composite; Magnesium; Fracture toughness; Microstructure

## لینک ثابت مقاله در پایگاه سیویلیکا:

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