

عنوان مقاله:

Micro-Hardness and Microstructure of Mg/SiC Metal Matrix nano-Composites

محل انتشار:

پنجمین کنفرانس بین المللی کامپوزیت (سال: 1395)

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خلاصه مقاله:

In this study, Mg/SiC nano-composite has been fabricated using powder metallurgy and warm rolling method. First, Mg and nano SiC particles with two different volume percent (1.0 vol% and 3.0 vol%) have been ballmilled. Then, the mixtures have been cold-pressed and sintered, respectively. Finally, warm-rolling process has been implemented on the specimens at 300°C for six passes. Moreover, the results were compared to monolithic magnesium specimen, which were produced in the same way as the composites (without reinforcement particles). The scanning electron microscopy (SEM) examination of composite specimens reveals an acceptable distribution of SiC particles. Also, the results show that increasing the presence of SiC nano-particles and the number of rolling passes enhance the Micro-Vickers hardness of the composites, although grain size refinement is not considerable.

کلمات کلیدی:

Magnesium Matrix nano-Composite, SiC nano-Particle, Powder Metallurgy, Warm Rolling

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