عنوان مقاله:

CHARACTERIZATION OF MAGNESIUM BASED AZ91/SIO2 NANO COMPOSITE PRODUCED VIA FRICTION STIR PROCESSING

محل انتشار:

اولین همایش بین المللی و ششمین همایش مشترک انجمن مهندسی متالورژی ایران (سال: 1391)

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خلاصه مقاله:

In this research, Friction Stir Processing was employed to fabricate composite layer on as-cast AZ91 magnesium alloy by using two different grain sizes of SiO2 particles (5 micro and 10 Nano meters). The effects of common FSP process parameters such as traverse speed, pass number and grain size on the microstructural and mechanical properties of the composite layer was investigated. Microstructural analysis was done by optical microscopy (OM) and scanning electron microscopy (SEM). FSP produces a homogeneous microstructure. Results show a considerable improvement in the microstructural andmechanical characteristics of the FSPed zone as a result of much grain refinement and pinning effect of nano-SiO2 particles as compared to those of the base metal. Micro hardness studies also show that hardness in the stir zone (SZ) increases by almost 1.5 times, from 66 to 93 HV.

کلمات کلیدی:

Friction Stir Processing; Magnesium alloy; Surface composite layer

لینک ثابت مقاله در پایگاه سیویلیکا: