

## عنوان مقاله:

Influence of Li addition on the microstructure and tensile properties of extruded Al-25 wt.%Mg<sub>2</sub>Si composite

## محل انتشار:

دومین همایش بین المللی و هفتمین همایش مشترک انجمن مهندسی متالورژی ایران و انجمن علمی ریخته‌گری ایران (سال: 1392)

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## خلاصه مقاله:

In this work, the effect of Li addition and hot-extrusion on the microstructure and tensile properties of Al-25 wt.%Mg<sub>2</sub>Si in-situ composite have been studied. Cast, modified and homogenized small ingots were extruded at 520 °C at extrusion ratio of 6:1 and ram speed of 1mm/s. different techniques such as metallography and scanning electron microscope (SEM) were used to characterize the mechanical behavior, microstructural observations and fracture surface of this composite. With the addition of Li up to 0.5%, the average size of primary Mg<sub>2</sub>Si decreases from 186 μm to 15 μm in hot-extruded condition. Also, adding up to 0.5% of Li increases ultimate tensile strength (UTS) and tensile elongation values. The highest UTS and elongation values were found to be 177 MPa and 8% respectively. Fracture surface examinations indicated a transition from brittle fracture mode in as-cast composite to ductile fracture in modified and extruded specimens

## کلمات کلیدی:

Al/Mg<sub>2</sub>Si, Microstructure, Modification, Hot extrusion

## لینک ثابت مقاله در پایگاه سیویلیکا:

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