

عنوان مقاله:

Microstrutural assessment and mechanical performance of AL-6% Mg-X%Ca alloy in as-cast condition

محل انتشار:

چهارمین کنفرانس بین المللی آلومینیوم ایران ۱۴۰۶ IIAAC (سال: 1395)

تعداد صفحات اصل مقاله: 6

نویسندگان:

Gh Ashuri - School of Metallurgy and Materials, University of Tehran, Tehran, Iran

M Emamy - School of Metallurgy and Materials, University of Tehran, Tehran, Iran

F Ostadi - Faculty of Materials Engineering, Sahand University of Technology, Tabriz, Iran

خلاصه مقاله:

This study was undertaken to investigate the effect of different amount of calcium (0.01, 0.03, 0.05, 0.1, 0.3, 0.5, 1, 3, and 5 weight percent of calcium) on the microstructure and mechanical properties of Al-6%Mg alloy in as-cast condition. In current work, microstructural assessment was carried out by optical and scanning electron microscopy and also the change of mechanical properties was investigated by tensile tests. By increasing the calcium content, the ultimate tensile strength (UTS) of Al-6%Mg base alloy increases from 244 MPa to 293 MPa. And also the results showed that, increasing the calcium contents enhances the hardness values of the base alloy. Since the maximum solubility of calcium in aluminium alloys is very low, most of the calcium concentrations precipitated in the form of calcium-rich intermetallic compound such as CaAl_2 , which is greatly brittle and excessive presence of calcium contents lead to decrement in tensile properties.

کلمات کلیدی:

Calcium contents, Microstructure, Al-6%Mg, CaAl_2

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/690185>

