عنوان مقاله:

EFFECTS OF HOT EXTRUSION ON MICROSTRUCTURE OF Al – 16 WT.% Al4Sr IN-SITU METAL MATRIX COMPOSITE CONTAINING DIFFERENT WEIGHT PERCENTAGES OF Cu

محل انتشار:

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نویسندگان:

Kourosh Tavighi - *School of Metallurgy and Materials Engineering, College of Engineering, University of Tehran, Tehran, P.O. Box: ۱۴۳۹۵-۷۳۱, Iran*

Massoud Emamy
Jafar Rassizadehghani
Seyed Ehsan Vaziri Yeganeh - *Imam Khomeini International University, Qazvin, Iran*

خلاصه مقاله:

The effects of hot extrusion on the microstructure of cast aluminum metal matrix composite (MMC) containing 16 wt.% long and bulky Al4Sr intermetallics with different weight percentages (0.3 wt.% - 5 wt.%) of Cu were studied. Microstructural examinations were assessed by the use of optical microscope (OM), scanning electron microscope (SEM) and X-ray diffractometry (XRD). The results showed that hot extrusion with the ratio of 12:1 at 500 ˚C reduces the size ofAl4Sr particles tremendously. The maximum length of Al4Sr particles changes from 222 μm to 95 μm.Due to the presence of coarse particles and intrinsic brittleness of Cu-rich intermetallics before hot extrusion, reaching to suitable mechanical properties is not optimistic. After hot extrusion with optimum parameters, CuAl2 particles alter from coarse to fine; moreover, the distribution mode of precipitates (Al4Sr particles and Cu-rich intermetallics mainly CuAl2) becomes uniform

کلمات کلیدی:

Metal matrix composite (MMC); Al4Sr intermetallics; Cu-rich intermetallics; Microstructure; Hot extrusion

لینک ثابت مقاله در پایگاه سیویلیکا: