

عنوان مقاله:

Characterizing Solidification of Zn-Mg-Al Alloy with Addition of 0.1%Sb by Non-Equilibrium Thermal Analysis

محل انتشار:

ششمین کنفرانس و نمایشگاه بین المللی مهندسی متالورژی و مواد (سال: 1396)

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خلاصه مقاله:

In this study microstructure, phase evolution and solidification characteristics of Zn-0.5%Al-0.5%Mg-0.1%Sb cast alloy have been investigated by non-equilibrium thermal analysis. This alloy was selected as a test case since it is widely used for hot dipping process. Four different peaks related to dissimilar phase evolutions were identified with analyzing corresponding first derivative cooling curve and second derivative cooling curve. Solidification of the quaternary alloy completed in the range of 82.8 °C within 1080.4 s with solidification rate of 0.08 °C/s. Coherency of Zn dendrites occurred at 405.6°C. Solid fraction at coherency point was around 27%. Monitoring solidification of alloy by this method is a rapid, inexpensive and easy to operate compare to other technique in order to investigate microstructure .of hot-dipped coating alloy

کلمات کلیدی:

Zinc alloy, Solidification, Antimony, Microstructure, Thermal analysis

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