عنوان مقاله:

The effect of Manganese and cooling rate on the microstructure of piston`s alloy in the excess percentage of iron

محل انتشار:

دومین کنفرانس بین المللی آلومینیوم (سال: 1391)

تعداد صفحات اصل مقاله: 9

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خلاصه مقاله:

Adding of Fe to the alloy of piston for 0.7, 1.2 and 1.8% will create needle-like β intermetallic compounds and deteriorate mechanical properties. On the other hand, introduction of Sr and Mn will transform β intermetallic compounds to α in addition to modification of eutectic structure which can improve wear resistance and hardness. Results of this research have revealed that modification of the intermetallic compounds in the eutectic of Al-Si alloy by Mn (50% that of Fe) is possible just up to 1.2% of Fe. In contrast to previous expectation, the sample containing 1.8% Fe could not transform β intermetallics to α using 0.9% Mn. Increased rate of cooling from 3 to 15°C/s has decreased .the eutectic structure and refined the intermetallic compounds

کلمات کلیدی:

Al-Si eutectic alloy, additional Iron, Manganese, Strontium, cooling rate