Experimen Investigasi dari Reaksi FeMn dengan Besi Tuang Cair = Experimental Investigation of the Reaction of FeMn with a Cast Iron Melt

Muhammad Aya Addina Makarim, author

Abstrak

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Paduan memiliki peran penting di dalam industri besi dan baja untuk meningkatkan sifat dan kualitas produk akhir dengan cara mengubah mikrostrukturnya. Banyak penelitian sudah dilakukan guna meningkatkan pengetahuan tentang bagaimana paduan dapat mempengaruhi kualitas besi. Berbagai jenis paduan sudah sering digunakan dalam dunia modern, salah satunya adalah FeMn. Penelitian ini bertujuan untuk mempelajari bagaimana pengaruh FeMn pada kurva pendinginan besi, dan bagaimana FeMn bereaksi dengan besi tuang cair, teruatama besi tuang kelabu hipoeutektik. Zona reaksi diinvestigasi dibawah mikroskop dan SEM. Hasil penelitian menunjukan bahwa FeMn menurunkan temperatur eutektik dari besi tuang dan analisis mikrostruktur menunjukkan bahwa reaksi antara mangan dan besi menyebabkan mangan perlahan terdispersi ke dalam matrix besi.
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<i>ABSTRACT
Alloying has always been an important part in the iron and steel industry in order to improve the properties and qualities of end products by altering its microstructure. Many researches have been conducted to improve the understanding of how alloying elements could affect the quality of irons. Various types of alloys are already been used in the modern world. One of them is ferromanganese. This study aims to investigate the reaction of ferromanganese alloy with a cast iron melt, specifically hypoeutectic grey cast iron. The study particularly focuses on how ferromanganese affects the cooling curve of cast iron, and how it reacts with the cast iron. The reaction zones were investigated under the light microscope and scanning electron microscope (SEM). The results indicate that ferromanganese decrease the eutectic temperature of the cast iron, and the microstructure analysis shows that the reaction between manganese and iron causing the manganese to gradually disperse into the iron matrix.