

Effects of the Cooling Rate on the Microstructure of Nd-Fe-B Alloys Fabricated by Strip Casting

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The effects of the cooling rate on the microstructure of Nd-Fe-B alloys fabricated by using a strip casting process have been investigated. In the cast strips prepared under a proper cooling rate, the growth of well-arranged $\text{Nd}_2\text{Fe}_{14}\text{B}$ columnar grains occurs and the columnar grains exhibit apparent alignment along [001]. The alignment coefficient of $\text{Nd}_2\text{Fe}_{14}\text{B}$ columnar grain is highest at wheel speed $V = 4$ m/s. The Nd-rich phase is well distributed enclosing the finest columnar grains of the $\text{Nd}_2\text{Fe}_{14}\text{B}$ phase in the strips prepared at wheel speed $V = 4$ m/s.

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