Magnetic anisotropy of the $Y_2(Co_{1-x}Fe_x)_{14}B$ intermetallic compounds

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Abstract: The magnetic anisotropy of the $Y_2(Co_{1-x}Fe_x)_{14}B$ compounds has been determined in the temperature range 4.2-250 K. The anomalous concentration dependence of the anisotropy energy is explained by means of a simple model of individual site anisotropy in combination with the preferential occupation of iron atoms at different 3d sites. From the analysis of the temperature dependence of the individual site anisotropy parameters it is found that the difference in the temperature dependence of the anisotropy of the iron ions at different sites is the main reason for the observed temperature anomaly of the anisotropy of $Y_2Fe_{14}B$. ?? 1989.

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