

Exchange interactions in amorphous Gd-Fe alloys

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Abstract: The strengths of the Gd-Gd, Gd-Fe and Fe-Fe exchange couplings have been estimated from ordering temperatures for the amorphous Gd-T ($T = \text{Cu, Al and Fe}$) systems. The obtained Gd-Gd and Gd-Fe exchange interactions always increase with increasing Gd-concentration. These results are associated to the 5d-electron density. The Fe-Fe coupling, however, was discussed in terms of the negative interactions between the Fe-Fe pairs with the closest inter-atomic spacing. ?? 1998 Elsevier Science B.V. All rights reserved.

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