Spin reorientation in $Nd_{1-x}Y_xFe_{11}Ti$

Luong N.H., Thuy N.P., Franse J.J.M.

Cryogenic Laboratory, Faculty of Physics, University of Hanoi, Viet Nam; Natuurkundig Laboratorium der Universiteit van Amsterdam, Valckenierstraat 65, 1018 XE Amsterdam, Netherlands

Abstract: Spin-reorientation phenomena have been studied in $Nd_{1-x}Y_xFe_{11}Ti$ compounds (x=0, 0.2, 0.4, 0.6 and 0.8). At the spin reorientation temperature, T_{SR}, the comparing Nd and Fe anisotropy contributions are in balance. By taking the Fe anisotropy from the Y counterpart, the anisotropy of the Nd sublattice at T_{SR} is determined experimentally. The temperature dependence of the Nd contribution to the magnetocrystalline anisotropy has been calculated by using a Hamiltonian consisting of crystal-field and exchange terms and was compared with the experimental results. A consistent set of parameters has been deduced by which the value T_{SR} can be reproduced for the whole series of the studied compounds. ?? 1992.

Index Keywords: Crystals; Intermetallics; Magnetic Materials--Electronic Properties; Magnetocrystalline Anisotropy; Spin Reorientation; Neodymium Compounds

Year: 1992
Source title: Journal of Magnetism and Magnetic Materials
Volume: 104-107
Issue: PART 2
Page : 1301-1302
Cited by: 8
Link: Scorpus Link
Correspondence Address: Luong, N.H.; Cryogenic Laboratory, Faculty of Physics, University of HanoiViet Nam
ISSN: 3048853
CODEN: JMMMD
Language of Original Document: English
Abbreviated Source Title: Journal of Magnetism and Magnetic Materials
Document Type: Article
Source: Scopus

Authors with affiliations:

1. Luong, N.H., Cryogenic Laboratory, Faculty of Physics, University of Hanoi, Viet Nam
2. Thuy, N.P., Cryogenic Laboratory, Faculty of Physics, University of Hanoi, Viet Nam
3. Franse, J.J.M., Natuurkundig Laboratorium der Universiteit van Amsterdam, Valckenierstraat 65, 1018 XE Amsterdam, Netherlands