

Chapter 163 Intersublattice exchange coupling in the lanthanide-transition metal intermetallics

Duc N.H.

Cryogenic Laboratory, Faculty of Physics, University of Hanoi, 90-Nguyen Trai, Thanh Xuân, Hanoi, Viet Nam

Abstract: [No abstract available]

Year: 1997

Source title: Handbook on the Physics and Chemistry of Rare Earths

Volume: 24

Page : 339-398

Cited by: 8

Link: Scopus Link

Correspondence Address: Duc, N.H.; Cryogenic Laboratory, Faculty of Physics, University of Hanoi, 90-Nguyen Trai, Thanh Xuân, Hanoi, Viet Nam

ISSN: 1681273

DOI: 10.1016/S0168-1273(97)24008-0

Language of Original Document: English

Abbreviated Source Title: Handbook on the Physics and Chemistry of Rare Earths

Document Type: Review

Source: Scopus

Authors with affiliations:

- Duc, N.H., Cryogenic Laboratory, Faculty of Physics, University of Hanoi, 90-Nguyen Trai, Thanh Xuân, Hanoi, Viet Nam

References:

- Aoki, M., Yamada, H., (1989) *J. Magn. & Magn. Mater.*, 78, p. 377
- Aoki, M., Yamada, H., (1992) *Physica B*, 177, p. 259
- (1965) *J. Magn. & Magn. Mater.*, 104-107
- Atzmony, U., Dariel, M.B., (1976) *Phys. Rev. B*, 13, p. 4006
- Aubert, G., Gignoux, D., Givord, F., Lemaire, R., Michelotti, B., (1978) *Solid State Commun.*, 25, p. 85
- Ballou, R., Gorges, B., Rakato, H., Ousset, J.C., (1989) *Physica B*, 155, p. 266
- Ballou, R., Radwanski, R.J., Lemaire, R., Franse, J.J.M., (1992) *Physica B*, 177, p. 262
- Ballou, R., Gamishidze, Z.M., Lemaire, R., Levitin, R.Z., Markosyan, A.S., Snegirev, V.V., (1993) *Sov. Phys. J.E.T.P.*, 75, p. 1041
- Ballou, R., Burzo, E., Mincic, A., Pop, V., (1993) *J. Magn. & Magn. Mater.*, 118, pp. L285
- Belorizky, E., Fremy, M.E., Gavigan, J.P., Givord, D., Li, H.S., (1987) *J. Appl. Phys.*, 61, p. 3971
- Belorizky, E., Gavigan, J.P., Givord, D., Li, H.S., (1988) *Europhys. Lett.*, 5 (4), p. 349
- Bloch, D., Lemaire, R., (1970) *Phys. Rev. B*, 2, p. 2468
- Brabers, J.H.V.J., Zhou, G.F., de Boer, F.R., Buschow, K.H.J., (1993) *J. Magn. & Magn. Mater.*, 118, p. 339

- Brabers, J.H.V.J., Li, Q.A., de Boer, F.R., Buschow, K.H.J., (1994) *Trans. Magn.*, 30, p. 1190
- Brommer, P.E., (1989) *Physica B*, 154, p. 197
- Brommer, P.E., (1991) *Physica B*, 173, p. 277
- Brommer, P.E., (1996) *J. Magn. & Magn. Mater.*, 157-158, p. 349
- Brommer, P.E., Dubenko, I.S., Franse, J.J.M., Levitin, R.Z., Markosyan, A.S., Radwanski, R.J., Snegirev, V.V., Solokov, A.V., (1993) *Physica B*, 183, p. 363
- Brooks, M.S.S., Johansson, B., (1983) *J. Phys. F*, 13, pp. L197
- Brooks, M.S.S., Johansson, B., (1993) *Ferromagnetic Materials*, 7, pp. 139-230. , Buschow K.H.J. (Ed), North-Holland, New York
- Brooks, M.S.S., Eriksson, O., Johansson, B., (1989) *J. Phys. Condens. Matter*, 1, p. 5861
- Brooks, M.S.S., Nordström, L., Johansson, B., (1991) *J. Phys. Condens. Matter*, 3, p. 2357
- Brooks, M.S.S., Nordström, L., Johansson, B., (1991) *J. Phys. Condens. Matter*, 3, p. 3393
- Brooks, M.S.S., Nordström, L., Johansson, B., (1991) *Physica B*, 172, p. 95
- Burzo, E., (1970) *C.R. Acad. Sci. Paris*, 271, p. 1159. , Ser. B
- Burzo, E., Oswald, E., Huang, M.Q., Boltich, E., Wallace, W.E., (1985) *J. Appl. Phys.*, 57, p. 4709
- Burzo, E., Creanga, I., Ursu, M., (1987) *Solid State Commun.*, 64, p. 585
- Buschow, K.H.J., (1980) *Ferromagnetic Materials*, 1, p. 297. , Wohlfarth E.P. (Ed), North-Holland, Amsterdam
- Buschow, K.H.J., de Mooij, D.B., Zhong, X.P., de Boer, F.R., (1990) *Physica B*, 162, p. 83
- Campbell, I.A., (1972) *J. Phys. F*, 2, pp. L47
- Castets, A., Gignoux, D., Hennion, B., (1980) *J. Magn. & Magn. Mater.*, 15-18, p. 375
- Clark, A., Callen, E., (1968) *J. Appl. Phys.*, 39, p. 5972
- Clausen, K.N., (1981) *Riso National Laboratory Report*, Riso R-426
- Coehoorn, R., (1989) *Phys. Rev. B*, 39, p. 13072
- Coehoorn, R., (1990) *Phys. Rev. B*, 41, p. 11790
- Coey, J.M.D., (1986) *J. Less-Common Met.*, 126, p. 21
- Colpa, J.C., Brabers, J.H.V.J., (1994) *Physica B*, 203, p. 29
- Cyrot, M., Lavagna, M., (1979) *J. Phys. (Paris)*, 40, p. 763
- de Boer, F.R., Buschow, K.H.J., (1992) *Physica B*, 177, p. 199
- de Boer, F.R., Zhong, X.P., Buschow, K.H.J., Jacobs, J.H., (1990) *J. Magn. & Magn. Mater.*, 90-91, p. 25
- de Gennes, P.G., (1962) *J. Phys. Radiat.*, 23, p. 510
- de Wijn, H.W., van Diepen, A.M., Buschow, K.H.J., (1976) *Phys. Status Solidi B*, 76, p. 11
- Drzazga, Z., Drzazga, M., (1987) *J. Magn. & Magn. Mater.*, 65, p. 21
- Drzazga, Z., Mydlarz, T., (1988) *J. Phys. (Paris)*, 49, pp. C8-515
- Dubenko, I.S., Levitin, R.Z., Markosyan, A.S., Sokolov, A.Yu., (1995) *J. Magn. & Magn. Mater.*, 140-144, p. 825
- Duc, N.H., (1991) *Phys. Status Solidi B*, 164, p. 545
- Duc, N.H., (1993) *Phys. Status Solidi B*, 175, pp. K63
- Duc, N.H., (1993) *Phys. Status Solidi B*, 176, pp. K29
- Duc, N.H., (1994) *J. Magn. & Magn. Mater.*, 131, p. 224
- Duc, N.H., (1996) *J. Magn. & Magn. Mater.*, 152, p. 219
- Duc, N.H., Givord, D., (1995) *Proc. 2nd Int. Workshop on Materials Science*, p. 107. , Bekker F.F., Chien N.D., Franse J.J.M., and Hien T.D. (Eds). Hanoi, 10/1995

- Duc, N.H., Givord, D., (1995) *J. Magn. & Magn. Mater.*, 151, pp. L13
- Duc, N.H., Givord, D., (1996) *J. Magn. & Magn. Mater.*, 157-158, p. 169
- Duc, N.H., Oanh, T.K., (1997) *J. Phys. Condens. Matter*, 9, p. 1585
- Duc, N.H., Hien, T.D., Brommer, P.E., Franse, J.J.M., (1988) *J. Phys. F*, 18, p. 275
- Duc, N.H., Hien, T.D., Chau, N.H., Franse, J.J.M., (1988) *J. Phys.*, 49, p. 509
- Duc, N.H., Hien, T.D., Chau, N.H., (1990) *Acta Phys. Pol. A*, 78, p. 471
- Duc, N.H., Hien, T.D., Givord, D., (1992) *J. Magn. & Magn. Mater.*, 104-107, p. 1334
- Duc, N.H., Hien, T.D., Brommer, P.E., Franse, J.J.M., (1992) *J. Magn. & Magn. Mater.*, 104-107, p. 1252
- Duc, N.H., Givord, D., Lacroix, C., Pinettes, C., (1992) *Europhys. Lett.*, 20, p. 47
- Duc, N.H., Hien, T.D., Givord, D., Franse, J.J.M., de Boer, F.R., (1993) *J. Magn. & Magn. Mater.*, 124, p. 305
- Duc, N.H., Brommer, P.E., Franse, J.J.M., (1993) *Physica B*, 191, p. 239
- Duc, N.H., Brommer, P.E., Kayzel, F., Thang, C.V., Franse, J.J.M., (1995) *Proc. 2nd Int. Workshop on Materials Science*, p. 137. , Bekker F.F., Chien N.D., Franse J.J.M., and Hien T.D. (Eds). Hanoi, 10/1995
- Duc, N.H., Sokolov, A.Y., Levitin, R.Z., Brommer, P.E., (1997), in preparation Duc, N.H., Tan, M.M., Tan, N.D., Givord, D., Teillet, J., (1997) *J. Magn. & Magn. Mater.*, , presented at. to be published
- Dumelow, T., Riedi, P.C., Mohn, P., Schwarz, K., Yamada, Y., (1986) *J. Magn. & Magn. Mater.*, 54-57, p. 1081
- Ermolenko, A.S., (1980) *Fiz. Met. Metalloved.*, 50, p. 741. , [Phys. Met. Metall. 50, 57]
- Ermolenko, A.S., (1982) *Workshop on Lanthanide-Cobalt Permanent Magnets*, p. 771. , Fidler J. (Ed), Technical Univ. Viena, Amsterdam
- Ermolenko, A.S., (1985) *Sov. Phys. Solid State*, 27 (1), p. 148
- Fähnle, M., Hummler, K., Liebs, M., Beuerle, T., (1993) *J. Appl. Phys. A*, 57, p. 67
- Farrell, J., Wallace, W.E., (1966) *Inorg. Chem.*, 5, p. 105
- Franse, J.J.M., de Boer, F.R., (1995) *J. Mag. & Magn. Mater.*, 140-144, p. 789
- Franse, J.J.M., Radwanski, R.J., (1993) *Ferromagnetic Materials*, 7, p. 307. , Buschow K.H.P. (Ed), North-Holland, Amsterdam
- Franse, J.J.M., de Boer, F.R., Fring, P.H., Gersdorf, R., Menovsky, A., Radwanski, R.J., Sinnema, S., (1985) *Phys. Rev. B*, 31, p. 4347
- Franse, J.J.M., Radwanski, R.J., Menovsky, A., (1986) *J. Magn. & Magn. Mater.*, 54-57, p. 1639
- Franse, J.J.M., Kayzel, F.E., Marquina, C., Radwanski, R.J., Verhoef, R., (1992) *J. Alloys & Compounds*, 181, p. 95
- Friedel, J., (1958) *Nuovo Cimento Suppl.*, N2, p. 287
- Frings, P.H., Franse, J.J.M., Hilscher, G., (1983) *J. Phys. F*, 13, p. 175
- Gavigan, J.P., Givord, D., Li, H.S., Voiron, J., (1988) *Physica B*, 149, p. 345
- Germano, D.J., Butera, R.A., (1981) *Phys. Rev.*, 24, p. 3912
- Gignoux, D., Givord, F., (1979) *J. Phys. F*, 9, p. 1409
- Gignoux, D., Schmitt, D., (1991) *J. Magn. & Magn. Mater.*, 100, p. 99
- Gignoux, D., Givord, F., Lemaire, R., (1975) *Phys. Rev. B*, 12, p. 3878
- Gignoux, D., Givord, F., Koehler, W.C., (1977) *Physica B*, 88-86, p. 165
- Gignoux, D., Givord, F., Schweizer, J., (1977) *J. Phys. F*, 7, p. 1823
- Gignoux, D., Givord, F., Koehler, W.C., Moon, R.M., (1977) *J. Mag. & Magn. Mater.*, 5, p. 1972
- Gignoux, D., Lemaire, R., Mohlo, P., Tasset, F., (1980) *J. Magn. & Magn. Mater.*, 21, p. 307
- Givord, D., Lemaire, R., (1974) *IEEE Trans. Magn.*, 10, p. 109
- Givord, D., Li, H.S., Cadogan, J.M., Coey, J.M.D., Gavigan, J.P., Yamada, O., Maruyama, H., Hirose, H., (1988) *J. Appl.*

Phys., 63, p. 3713

- Goto, T., Sakakibara, T., Mutara, K., Komatsu, H., Fukamichi, K., (1991) *J. Magn. & Magn. Mater.*, 90-91, p. 700
- Goto, T., Kouji, K., Bartashevich, M.I., Katori, H.A., Yamaguchi, M., Yamoto, I., Sugaya, F., (1994) *Tech. Rep. of ISSP A2707*, University of Tokyo, Amsterdam
- Gubbens, P.C.M., Buschow, K.H.J., (1982) *J. Phys F*, 12, p. 2715
- Gubbens, P.C.M., van der Kraan, A.M., Buschow, K.H.J., (1984) *J. Phys. F*, 14, p. 235
- Gubbens, P.C.V., van der Kraan, A.M., Buschow, K.H.J., (1988) *J. Phys.*, 12, p. 591
- Herbst, J.F., Yelow, W.B., (1986) *J. Appl. Phys.*, 60, p. 4224
- Hong, N.M., Thuy, N.P., Franse, J.J.M., (1990) 6th Int. Symp. Magnetic Anisotropy and Coercivity in Rare Earth-Transition Metal Alloys, p. 230. , Sankar S.G. (Ed), Carnegie Mellon University, Pittsburgh
- Jacobs, J.H., Buschow, K.H.J., Zhou, G.F., Li, X., de Boer, F.R., (1992) *J. Magn. & Magn. Mater.*, 116, p. 220
- Jacobs, J.H., Buschow, K.H.J., Zhou, G.F., Liu, J.P., Li, X., de Boer, F.R., (1992) *J. Magn. & Magn. Mater.*, 104-107, p. 1275
- Jacobs, J.H., Buschow, K.H.J., Zhou, G.F., de Boer, F.R., (1992) *Physica*, 179, p. 177
- Janak, J.F., (1977) *Phys. Rev. B*, 16, p. 255
- Jaswal, S.S., Ren, Y.G., Sellmyer, D.J., (1990) *J. Appl. Phys.*, 67, p. 4564
- Kebe, B., (1983) Thesis, , (Grenoble)
- Kirchmayr, H., Poldy, C.A., (1978) *J. Magn. & Magn. Mater.*, 8, p. 1
- Klein, B.M., Pickett, W.E., Paraconstantopoulos, D.A., Boyer, L.L., (1983) *Phys. Rev. B*, 27, p. 6721
- Koon, N.C., Rhyne, J.J., (1981) *Phys. Rev. B*, 23, p. 2078
- Koon, N.C., Williams, C.M., Das, B.N., (1991) *J. Magn. & Magn. Mater.*, 100, p. 173
- Kou, C.X., Zhao, T.S., Grössinger, R., Krichmayr, H.R., Li, X., de Boer, F.R., (1992) *Phys. Rev. B*, 46, p. 11204
- Laforest, J., (1981) Thesis, , (Grenoble)
- Lemaire, R., (1966) *Cobalt*, 33, p. 201
- Li, H.S., Li, Y.P., Coey, J.M.D., (1991) *J. Phys. Condens. Matter*, 3, p. 7227
- Li, H.S., Li, Y.P., Coey, J.M.D., (1992) *J. Magn. & Magn. Mater.*, 104-107, p. 1444
- Li, Q.A., (1993) Thesis, , Institute of Physics, Pittsburgh
- Liebs, M., Hummler, K., Fähnle, M., (1992) *Phys. Rev. B*, 46, p. 11201
- Liebs, M., Hummler, K., Fähnle, M., (1993) *J. Magn. & Magn. Mater.*, 124, p. 239
- Liu, J.P., (1994) Thesis, , University of Amsterdam, Beijing
- Liu, J.P., de Boer, F.R., Buschow, K.H.J., (1991) *J. Magn. & Magn. Mater.*, 98, p. 291
- Liu, J.P., de Boer, F.R., Buschow, K.H.J., (1991) *J. Appl. Phys.*, 69, p. 5536
- Liu, J.P., de Boer, F.R., Buschow, K.H.J., (1991) *J. Less-Common Met.*, 175, p. 137
- Liu, J.P., de Boer, F.R., de Châtel, P.F., Coehoorn, R., Buschow, K.H.J., (1994) *J. Magn. & Magn. Mater.*, 134, p. 159
- Liu, J.P., Zang, Z.D., Zeng, D.C., Tang, N., de Châtel, P.F., de Boer, F.R., Buschow, K.H.J., (1994) *IEEE Trans. Magn.*, 30, p. 849
- Liu, J.P., de Boer, F.R., de Châtel, P.F., Buschow, K.H.J., (1994) 1994c, cited by Liu
- Loewenhaupt, M., Sosnowska, I., Taylor, A., Osborn, R., (1991) *J. Appl. Phys.*, 69, p. 5593
- Néel, L., (1948) *Ann. Phys.*, 3, p. 137
- Nordström, L., Brooks, M.S.S., Johansson, B., (1992) *J. Magn. & Magn. Mater.*, 104-107, p. 1378
- Peedziwiatr, A.T., Jaiang, S.V., Wallace, W.E., Burzo, E., Pop, V., (1987) *J. Magn. & Magn. Mater.*, 66, p. 69
- Perkins, R.S., Strassler, S., (1977) *Phys. Rev. B*, 15, p. 477

- Poldy, C.A., Taylor, K.N.R., (1972) *J. Phys. F*, 2, pp. L105
- Radwanski, R.J., (1986) *Phys. Status Solidi B*, 137, p. 486
- Radwanski, R.J., (1986) *Z. Phys. B*, 65, p. 65
- Radwanski, R.J., Franse, J.J.M., (1992) *Physica B*, 177, p. 193
- Radwanski, R.J., Franse, J.J.M., (1993) *J. Magn. & Magn. Mater.*, 119, p. 221
- Radwanski, R.J., Franse, J.J.M., Sinnema, S., (1985) *J. Phys. F*, 15, p. 969
- Radwanski, R.J., Zhong, X.P., de Boer, F.R., Buschow, K.H.J., (1990) *Physica B*, 164, p. 131
- Radwanski, R.J., Franse, J.J.M., Quang, P.H., Kayzel, F.E., (1992) *J. Magn. & Magn. Mater.*, 104-107, p. 1321
- Radwanski, R.J., Zhong, X.P., de Boer, F.R., Yang, F.M., Li, J.Y., Kohashi, T., Ono, M., Yamaguchi, A., (1992) *J. Magn. & Magn. Mater.*, 104-107, p. 1139
- Radwanski, R.J., Franse, J.J.M., Gignoux, D., Kayzel, F.E., Marquina, C., Szewczyk, A., (1992) *Physica B*, 177, p. 291
- Radwanski, R.J., Franse, J.J.M., Verhoef, R., (1992) *J. Magn. & Magn. Mater.*, 83, p. 127
- Rhyne, J.J., (1987) *J. Magn. & Magn. Mater.*, 70, p. 88
- Ritter, C., (1989) *J. Phys. Condens. Matter*, 1, p. 2765
- Roeland, L.W., Cock, G.J., Muller, F.A., Moleman, C.A., McEwen, K.A., Jordan, R.C., Jones, D.W., (1975) *J. Phys. F*, 5, pp. L233
- Ruderman, M.A., Kittel, C., (1954) *Phys. Rev.*, 96, p. 99
- Sankar, S.G., Rao, V.U.S., Segal, E., Wallace, W.E., Frederick, W.G.D., Garrett, H.J., (1975) *Phys. Rev. B*, 11, p. 435
- Shimizu, M., (1964) *Proc. Phys. Soc.*, 84, p. 397
- Shimizu, M., (1965) *Proc. Phys. Soc.*, 85, p. 147
- Simmons, M., Moreau, J.M., James, W.J., Givord, F., Lemaire, R., (1973) *J. Less-Common Met.*, 30, p. 75
- Sinnema, S., (1988) Thesis, (Amsterdam)
- Sinnema, S., Franse, J.M.M., Radwanski, R.J., Menovsky, A., de Boer, F.R., (1987) *J. Phys. F*, 17, p. 233
- Steiner, W., Gratz, E., Ortbauer, H., Cammen, H.W., (1978) *J. Phys. F*, 8, p. 1525
- Swift, W.N., Wallace, W.E., (1968) *J. Chem. Phys.*, 49, p. 154
- Szewczyk, A., Radwanski, J.R., Franse, J.M.M., Nakotte, H., (1992) *J. Magn. & Magn. Mater.*, 104-107, p. 1319
- Thuy, N.P., Hong, N.M., Hien, T.D., Franse, J.J.M., (1990) 6th Int. Symp. Magnetic Anisotropy and Coercivity in Rare Earth-Transition Metal Alloys, p. 60. , Sankar S.G. (Ed), Carnegie Mellon University, Pittsburgh
- Trugg, J., Johansson, B., Brooks, M.S.S., (1992) *J. Magn. & Magn. Mater.*, 104-107, p. 1447
- Tyablikov, S.V., (1967) *Methods in Quantum Theory of Magnetism*, , Plenum Press, Pittsburgh
- Verhoef, R., (1990) Thesis, , University of Amsterdam, New York
- Verhoef, R., Quang, P.H., Franse, J.J.M., Radwanski, R.J., (1990) *J. Magn. & Magn. Mater.*, 83, p. 139
- Verhoef, R., Radwanski, R.J., Franse, J.J.M., (1990) *J. Magn. & Magn. Mater.*, 83, p. 176
- Williams, A.R., Moruzzi, V.L., Malozemoff, A.V., Terakura, K., (1983) *IEEE Trans. Magn.*, 19, p. 1983
- Yamada, H., Aoki, M., (1993) *Recent Advances in Magnetism of Transition Metal Compounds*, p. 42. , Kotani A., and Suzuki N. (Eds), World-Scientific, Singapore
- Yamada, H., Shimizu, M., (1985) *J. Phys. F*, 15, pp. L180
- Yamada, H., Inoue, J., Terao, K., Kanda, S., Shimizu, M., (1984) *J. Phys. F*, 14, p. 1049
- Yamada, M., Kato, H., Yamamoto, H., Nakagawa, Y., (1988) *Phys. Rev. B*, 38, p. 620
- Zeng, D.C., (1994) Thesis, , Institute of Metal Research, Singapore
- Zhao, Z.G., (1994) Thesis, , University of Amsterdam, Shenyang

- Zhao, Z.G., de Boer, F.R., de Châtel, P.F., Buschow, K.H.J., (1994) *Physica B*, 193, p. 45
- Zhong, X.P., de Boer, F.R., Jacobs, J.H., Buschow, K.H.J., (1990) *J. Magn. & Magn. Mater.*, 92, p. 46
- Zhong, X.P., de Boer, F.R., de Mooij, D.B., Buschow, K.H.J., (1990) *J. Less-Common Met.*, 163, p. 123
- Zhou, G.F., de Boer, F.R., Buschow, K.H.J., (1992) *Physica B*, 176, p. 288
- Zhou, G.F., de Boer, F.R., Buschow, K.H.J., (1992) *J. Alloys & Compounds*, 187, p. 299
- Zhou, G.F., Li, X., de Boer, F.R., Buschow, K.H.J., (1992) *J. Magn. & Magn. Mater.*, 109, p. 265