

### Awards

1995 JSPM (Japan Society of Powder and Powder Metallurgy) Award for Distinguished Achievement in Research

1997 The best year's paper award on "Development of high-Tc superconducting permanent magnets and their application to the superconducting motor", (Japan Institute of Metals)

1999 The award of merit'99 on the development of pulsed field magnetization technique for high-Tc bulk superconductors (Society of Non-Traditional Technology)

2002 The best year's paper award on "Development of the Fe<sub>2</sub>VAl-based alloys as new thermoelectric materials", (Japan Institute of Metals)

2003 PASREG Award of Excellence (4<sup>th</sup> International Workshop on Processing and Applications of Superconducting (RE)BCO Large Grain Materials, Jena, Germany, June30-July 2, 2003)

2004 Masumoto Hakaru Award (Spring Meeting, Tokyo, March 30, 2003)

2005 William Hume-Rothery Award (134<sup>th</sup> TMS Annual Meeting, San Francisco, U.S.A. February 14, 2005)

2007 The best year's Materia Japan Paper award on "The Hume-Rothery Electron Concentration Rule and Phase Stability of Mechanism of Structurally Complex Intermetallic Compounds", (Japan Institute of Metals, September, 2007)

### Books

1. U.Mizutani, "Physical Properties of Amorphous Alloys", (AGNE, Japan), edited by T.Masumoto and K.Fukamichi (1981) (in Japanese)

2. U.Mizutani, Y.Yamada and Y.Hoshino, "Preparation of Amorphous Alloys by Melt Quenching", (AGNE Technical Center, Japan, 1986) (in Japanese)

3. U.Mizutani and T.B.Massalski, "Electronic and Size Effects in the Stability of Noble Metal Based Alloys", edited by T.B.Massalski, W.B.Pearson, L.H.Bennett and Y.A.Chang (The Metallurgical Society of AIME) (1986) p.127-140

4. U.Mizutani, "Electronic Properties of Liquid, Amorphous and Quasicrystalline Alloys", Materials Science and Technology-A Comprehensive Treatments- edited by R.W.Cahn, P.Haasen and E.J.Kramer (VCH, 1993), vol.3B, Chapter 9, pp.97-157

5. U.Mizutani, "Electron Theory of Metals (I) and (II)" Uchida-Rokakuho, (1995 and 1996) (in Japanese)

6. U.Mizutani, "2.3 Electron Theory of Solids" in Metal Handbook, Six Edition (2000) (Maruzen, Japan) (in Japanese)

7. U.Mizutani, "Introduction to the Electron Theory of Metals", Cambridge University Press, (2001)

8. U.Mizutani, "Electron Transport Properties of Complex Metallic Alloys" in "Basics of Thermodynamics and Phase Transitions in Complex Intermetallics", (Book Series on Complex Metallic Alloys-Vol.1, edited by E.Belin-Ferré, World Scientific, Singapore, 2008), pp.319-365

9. U. Mizutani, R. Asahi, H. Sato, and T. Takeuchi, "AB INITIO TEST OF THE HUME-ROTHERY ELECTRON CONCENTRATION RULE FOR GAMMA-BRASSES", Chapter 15 in "Diffuse Scattering in the 21<sup>st</sup> Century: Emerging Insights into Materials Structure and Behavior", (edited by R.I.Barabash, G.E.Ice and P.E.A.Turchi, Momentum Press, New Jersey, 2009), pp.283-301

Publications (Journals and Proceedings in English)

1. U.Mizutani, S.Noguchi and K.Kondo, "Electronic specific heat of  $\alpha$ -phase alloys based on copper and silver", Proc. of 12th Int.Conf. on Low Temperature Physics (Kyoto) (1970)
2. U.Mizutani, "Low temperature specific heat of pure zinc", Japan.J.Appl.Phys., **10** (1971) 367
3. U.Mizutani, S.Noguchi and T.B.Massalski, "Electronic specific heat of  $\alpha$ -phase alloys based on copper and silver", Phys.Rev. **B5** (1972) 2057
4. Y.Iwama, U.Mizutani and F.B.Humphrey, "Formation process of MnBi thin films", IEEE Trans. on Magnetism **8** (1972) 487
5. T.B.Massalski, U.Mizutani and S.Noguchi, "Low temperature specific heat of zinc alloyed with silver", Proc.Royal Soc.London **A343** (1975) 363
6. U.Mizutani and T.B.Massalski, "Experimental evidence for the Fermi surface overlaps effect in  $\epsilon$ -phase Ag-Zn alloys", Proc.Royal Soc.London **A343** (1975) 375
7. S.Matsuo, U.Mizutani, T.B.Massalski and S.Noguchi, "The superconducting transition temperature in  $\epsilon$ -phase Ag-Zn alloys", Phys.Rev. **B12** (1975) 4941
8. U.Mizutani and T.B.Massalski, "Specific heats of  $\alpha$  phase and  $\zeta$  phase Ag-Al alloys in the range 1.5-4.2 K", J.Phys.F: Metal Phys. **5** (1975) 2262
9. U.Mizutani, T.B.Massalski and J.Bevk, "Low temperature specific heat of dilute Pd-H alloys", J.Phys.F: Metal Phys. **6** (1976) 1
10. U.Mizutani, T.B.Massalski, J.McGinness and P.Corry, "Low temperature specific heat measurements in melanins", Nature **259** (1976) 505
11. T.B.Massalski and U.Mizutani, "Electronic band structure of HCP electron phases based on noble metals", Proc.Royal Soc.London **A351** (1976) 423
12. U.Mizutani, T.B.Massalski, J.Bevk and R.R.Vanderboort, "Influence of deformation on the low temperature specific heat of a dilute  $\alpha$ -phase Pd-H alloy", J.Phys.F: Metal Phys. **7** (1977) L63
13. U.Mizutani, T.Kondow and T.B.Massalski, "Low temperature specific heat of TCNQ complexes", Phys.Stat.Sol. (b) **81** (1977) 157
14. J.Bevk, T.B.Massalski and U.Mizutani, "Specific heat of Au-Cd  $\alpha$  and  $\zeta$  alloys in the range 1.5 and 4.2 K", Phys.Rev. **B16** (1977) 3456
15. U.Mizutani, T.Kondow and T.B.Massalski, "The measurements of low temperature specific heats and x-ray photoelectron spectra for some graphite alkali metal intercalation compounds", Mat.Sci.Eng. **31** (1977) 267
16. U.Mizutani, T.Kondow and T.B.Massalski, "Low temperature specific heat of graphite intercalation compounds with potassium and rubidium", Phys.Rev. **B17** (1978) 3165
17. U.Mizutani, K.T.Hartwig, T.B.Massalski and R.W.Hopper, "Low temperature specific heat of glassy Pd<sub>1-x</sub>ySixCuy alloys", Phys.Rev.Lett. **41** (1978) 661
18. T.B.Massalski, U.Mizutani, K.T.Hartwig and R.W.Hopper, "Low temperature specific heat measurements on amorphous ribbons", Proc.of 3rd Int.Conf.on Rapidly Quenched Metals (Sussex, England) (1978) vol.2, p.81
19. T.B.Massalski and U.Mizutani, "Electronic structure of Hume-Rothery phases", Prog.Mat.Sci. **22** (1978) 151
20. U.Mizutani, T.Kondow and M.Uda, "Experimental observation of the Fermi surface-Brillouin zone interaction in pure zinc", Phys.Stat.Sol. (b) **91** (1979) 693
21. M.Haghgooe, S.Berko and U.Mizutani, "Studies of the Fermi surface of  $\alpha$ -phase CuZn alloys", Proc.of 5th Int.Conf. on Positron Annihilation (Lake Yamanaka, Japan) (1979) p.291
22. T.Nishio, Y.Iwama and U.Mizutani, "On phase analysis of Sm-Co alloys", Proc.of 4th Int.Workshop on Rare-Earth Cobalt Permanent Magnets and Their Applications (Hakone, Japan) (1979) p.291

23. T.Nishio, Y.Iwama and U.Mizutani, "Variation in coercivity of SmCo<sub>5</sub> type magnet with annealing", Proc.of 4th Int.Workshop on Rare-Earth Cobalt Permanent Magnets and Their Applications (Hakone, Japan) (1979) p.283
24. U.Mizutani and T.B.Massalski, "Low-temperature lattice specific heats of an amorphous Pd-Si alloy subjected to various heat treatments", J.Phys.F: Metal Phys. **10** (1980) 1093
25. U.Mizutani and T.B.Massalski, "Hall effect measurements and the electronic structure of amorphous Pd-Si-(Cu) alloys", Phys.Rev. **B21** (1980) 3180
26. U.Mizutani and Y.Yazawa, "Glass formation in Hume-Rothery-type Cu-Ag-Ge alloys", Scripta Met. **14** (1980) 637
27. M.Suganuma, U.Mizutani and T.Kondow, "<sup>13</sup>C nuclear magnetic resonance in donor- and acceptor-type intercalation compounds", Phys.Rev. **B22** (1980) 5079
28. T.Mizoguchi, M.Shiotani, U.Mizutani, T.Kudo and S.Yamada, "Structure and physical properties of a simple metal-metal amorphous alloy Mg<sub>70</sub>Zn<sub>30</sub>", Proc.of 4th Int.Conf.on Liquid and Amorphous Metals (Grenoble, France) (1980) J.Phys. **C-8** p.183
29. M.Suganuma, U.Mizutani and T.Kondow, "Low-temperature specific heat of rubidium-graphite intercalation compounds", Phys.Rev. **B23** (1981) 706
30. M.Matsuura, Y.Yazawa and U.Mizutani, "Low-temperature specific heat study of amorphous Fe<sub>1-x</sub>B<sub>x</sub> alloys", J.Phys.F: Metal Phys. **11** (1981) 1393
31. U.Mizutani and T.Mizoguchi, "Low-temperature specific heat measurements of simple divalent amorphous Mg<sub>0.7</sub>Zn<sub>0.3</sub> alloy", J.Phys.F: Metal Phys. **11** (1981) 1385
32. M.Matsuura and U.Mizutani, "Low-temperature specific heat of amorphous Fe-B and Fe-P alloys", Proc. of 4th Int.Conf. on Rapidly Quenched Metals (Sendai, Japan) (1981) vol.2, p.1291
33. T.Matuda and U.Mizutani, "Composition dependence of structural and electronic properties of amorphous Mg<sub>1-x</sub>Zn<sub>x</sub> alloys", Proc. of 4th Int.Conf. on Rapidly Quenched Metals (Sendai, Japan) (1981) vol.2, p.1315
34. U.Mizutani and T.Yoshida, "Electron transport properties of vapour quenched amorphous Ag-Cu-Ge thin films", Proc. of 4th Int.Conf. on Rapidly Quenched Metals (Sendai, Japan) (1981) vol.2, p.1319
35. U.Mizutani, "Electronic properties of liquid quenched Ag-Cu-Ge amorphous alloys", Proc. of 4th Int.Conf. on Rapidly Quenched Metals (Sendai, Japan) (1981) vol.2, p.1279
36. U.Mizutani, M.Suganuma and T.Kondow, "The electronic structure of donor- and acceptor-type intercalation compounds by means of low temperature specific heats and <sup>13</sup>C nuclear magnetic resonance", Proc. of Int.Conf. on Physics of Intercalation Compounds (Trieste, Italy) (1981) p.280
37. T.Matsuda and U.Mizutani, "Electron transport properties of amorphous Mg<sub>80.4</sub>Cu<sub>19.6</sub> alloy", Solid State Commun. **44** (1982) 145
38. T.Matsuda and U.Mizutani, "Electron transport properties of amorphous Mg-Zn alloys with different Zn compositions", J.Phys.F: Metal Phys. **12** (1982) 1877
39. T.Yamazaki, U.Mizutani and Y.Iwama, "Formation of vapour-deposited SnO<sub>2</sub> thin films studied by Rutherford backscattering", Japan.J.Appl.Phys. **21** (1982) 440
40. U.Mizutani, M.Suganuma and T.Kondow, "Low temperature specific heats of bromine-graphite intercalation compounds", Solid State Commun. **43** (1982) 303
41. U.Mizutani and T.Yoshida, "Experimental test of the extended Ziman theory, using free electron-like Ag-Cu based amorphous alloys", J.Phys.F: Metal Phys. **12** (1982) 2331
42. M.Matsuura and U.Mizutani, "Low-temperature specific heat study of amorphous Co<sub>1-x</sub>B<sub>x</sub> alloys", J.Phys.F: Metal Phys. **13** (1983) 1539
43. T.Yamazaki, U.Mizutani and Y.Iwama, "Electrical properties of polycrystalline SnO<sub>2</sub> thin films and single crystals exposed to O<sub>2</sub>- and H<sub>2</sub>-gases", Japan.J.Appl.Phys. **22** (1983) 454

44. T.Kondow and U.Mizutani, "Specific heat anomaly of  $C_{24}K$  arising from hydrogen physisorption", *Mat.Rep.Soc.Symp.Proc.* **20** (1983) 347
45. M.Matsuura and U.Mizutani, "Low-temperature specific heat for amorphous Fe-B and Fe-P alloys", *J.Mag.Mag.Mat.* **31-34** (1983) 1481
46. U.Mizutani, N.Akutsu and T.Mizoguchi, "Electronic properties of Cu-Ti metallic glasses", *J.Phys.F: Metal Phys.* **13** (1983) 2127
47. U.Mizutani and T.Matsuda, "Electronic properties of  $Ca_{1-x}Al_x$  metallic glasses", *J.Phys.F: Metal Phys.* **13** (1983) 2115
48. U.Mizutani, "Electronic structure of metallic glasses", *Prog.Mat.Sci.* **28** (1983) 97
49. U.Mizutani and F.Nakamura, "Magnetic susceptibility measurements of  $(Ag_{0.5}Cu_{0.5})_{1-x}Ge_x$  alloys in amorphous and liquid states", *J.Phys.F: Metal Phys.* **13** (1983) 2685
50. T.Kondow and U.Mizutani, "Low-temperature specific heats of  $C_{24}K(H_2)_x$  and  $C_{24}K(D_2)_x$ ", *Synthetic Metals* **6** (1983) 141
51. U.Mizutani and K.Yoshino, "Effect of  $2k_F/K_p$  on electron transport and density of states in Hume-Rothery type metallic glasses", *J.Non-Cryst.Solids* **61-62** (1984) 1313
52. U.Mizutani, M.Matsuura and K.Fukamichi, "Low-temperature specific heat study of Fe-rich Fe-Zr amorphous alloys", *J.Phys.F: Metal Phys.* **14** (1984) 731
53. U.Mizutani and K.Yoshino, "Formation and low-temperature electronic properties of liquid quenched Ag-Cu-X (X=Mg, Si, Sn and Sb) metallic glasses", *J.Phys.F: Metal Phys.* **14** (1984) 1179
54. T.Matsuda, N.Shiotani and U.Mizutani, "Electronic properties of  $Mg_{0.7}Zn_{0.3-x}Ga_x$  simple metallic glasses", *J.Phys.F: Metal Phys.* **14** (1984) 1193
55. A.Inoue, Y.Takahashi, A.Hoshi, U.Mizutani and T.Masumoto, "Application of an amorphous superconducting alloy in a liquid-helium level indicator", *J.Phys.E: Sci.Instrum.* **17** (1984) 564
56. U.Mizutani and T.Matsuda, "Electronic properties of Mg-based simple metallic glasses", *J.Phys.F: Metal Phys.* **14** (1984) 2995
57. U.Mizutani, "Systematic studies of electron transport properties of metallic glasses (invited)", *Proc.of 5th Int.Conf.on Rapidly Quenched Metals (Würzburg, Germany)* (1984) p.977
58. U.Mizutani and T.Matsuda, "Electron transport properties and related electronic structure of Mg-based metallic glasses", *Proc.of 5th Int.Conf.on Rapidly Quenched Metals (Würzburg, Germany)* (1984) p.1035
59. M.Matsuura, U.Mizutani and K.Fukamichi, "Low-temperature specific heat of amorphous Fe-Zr alloys in the wide concentration range", *Proc.of 5th Int.Conf.on Rapidly Quenched Metals (Würzburg, Germany)* (1984) p.1019
60. U.Mizutani, S.Ohta and T.Matsuda, "Low-temperature specific heat and electrical resistivity measurements of hydrogen-absorbed Pd-Zr and Ni-Zr metallic glasses", *J.Phys.Soc.Jpn* **54** (1985) 3406
61. U.Mizutani, M.Ichikawa, K.Ando and T.Kondow, "Low-temperature specific heat of  $HNO_3$ - and  $SbCl_5$ -graphite intercalation compounds", *Proc.of Int.Symp.on Graphite Intercalation Compounds, (Tsukuba, Japan)* (1985) p.347
62. T.Kondow, M.Sagawa, T.Takeyama, Y.Tomono, K.Ando and U.Mizutani, "ESR and low-temperature specific heats of  $C_{24}K(H_2)_x$  and  $C_{24}K(D_2)_x$ ", *Proc.of Int.Symp.on Graphite Intercalation Compounds, (Tsukuba, Japan)* (1985) p.213
63. U.Mizutani, "Electron transport properties of amorphous metals", *IEEE Trans.J.on Magnetism in Jpn* **TJMJ-1** (1985) 185
64. U.Mizutani and M.Takeuchi, "Low-temperature specific heat of pseudobinary  $(a_{1-x}b_x)_{77}Si_{10}B_{13}$  (a, b=Fe, Co, Ni) metallic glasses", *J.Phys.F: Metal Phys.* **16** (1986) 79
65. R.van den Berg, H.v.Löhneysen, A.Schröder, U.Mizutani and T.Matsuda, "Superconductivity of

- amorphous  $Mg_{0.7}Zn_{0.3-x}Ga_x$  alloys”, *J.Phys.F: Metal Phys.* **16** (1986) 69
66. T.Matsuda, U.Mizutani and H.Sato, “Thermoelectric power of Mg-based simple metallic glasses”, *J.Phys.F: Metal Phys.* **16** (1986) 1005
67. L.V.Meisel, P.J.Cote, T.Matsuda and U.Mizutani, “Pressure dependence of electrical resistivity for Mg-based amorphous alloys”, *J.Phys.F: Metal Phys.* **16** (1986) 1219
68. U.Mizutani and I.Bakonyi, “Low-temperature specific heats of pseudobinary  $(Ni_{1-x}Cu_x)_{80}P_{20}$  and  $(Ni_{1-x}Cu_x)_{77}B_{13}Si_{10}$  metallic glasses”, *J.Phys.F: Metal Phys.* **16** (1986) 1583
69. M.Matsuura and U.Mizutani, “Low-temperature specific heat study of  $Ni_{100-x}Zr_x$  ( $x=30-80$ ) metallic glasses”, *J.Phys.F: Metal Phys.* **16** (1986) L183
70. M.Inagaki, M.Suzuki, Y.Iwama and U.Mizutani, “Magnetoresistance in crystalline and amorphous Fe-Co-Ni based alloys”, *Japan.J.Appl.Phys.* **25** (1986) 1514
71. U.Mizutani, J.Hashizume and T.Matsuda, “Two-dimensional weak localization effect in amorphous Cu-Mg alloys”, *J.Phys.Soc.Jpn* **55** (1986) 3188
72. K.Fukamichi, T.Goto, Y.Satoh, T.Sakakibara, S.TODO, U.Mizutani and Y.Hoshino, “High-field susceptibility and spin wave stiffness constant of Co-Y amorphous alloys”, *IEEE Trans.on Magnetism* **MAG-22** (1986) 555
73. U.Mizutani, M.Tanaka and H.Sato, “Studies of negative TCR and electronic structure of non-magnetic metallic glasses based on Y and La”, *J.Phys.F: Metal Phys.* **17** (1987) 131
74. U.Mizutani, K.Fukamichi and T.Goto, “Low-temperature specific heat study of amorphous and crystalline Co-Y alloys”, *J.Phys.F: Metal Phys.* **17** (1987) 257
75. U.Mizutani, M.Sasaura, Y.Yamada and T.Matsuda, “Electronic structure and electron transport of Ca-Mg-Al metallic glasses”, *J.Phys.F: Metal Phys.* **17** (1987) 667
76. U.Mizutani, Y.Yamada and T.Matsuda, “On the negative TCR phenomena in non-magnetic metallic glasses”, *Proc.of 6th Int.Conf.on Liquid and Amorphous Metals (Garmisch-Partenkirchen, Germany)* (1987) p.711
77. H.Sato, T.Matsuda and U.Mizutani, “Effects of the electron-phonon interactions on the thermoelectric power in simple metallic glasses”, *Physica* **B144** (1987) 173
78. U.Mizutani, “Experimental studies of electron transport properties in non-magnetic metallic glasses (invited)”, *Proc.of Int.Conf. on Metallic and Semiconducting Glasses (Hyderabad, India)*, *Key Eng.Mat.* **13-15** (1987) 365
79. U.Mizutani, Y.Yamada, C.Mishima and T.Matsuda, “Evidence for the electronic structure-sensitive electron transport in  $Cu_{50}Zr_{50-x}Al_x$  ( $0 \leq x \leq 50$ ) metallic glasses”, *Solid State Commun.* **62** (1987) 641
80. M.Hasegawa, M.Suzuki, M.Matsui and U.Mizutani, “Electronic structure and magnetic states in pseudobinary  $(a_{1-x}b_x)_{77}B_{13}Si_{10}$  amorphous alloys with a, b=Ti, V, Mn, Fe, Co, Ni and Cu”, *IEEE Trans. on Magnetism* **MAG-23** (1987) 2545
81. U.Mizutani and T.Matsuda, “Resistivity, Hall coefficient and thermopower in  $Mg_{70}Cu_{30-x}Zn_x$  ( $0 \leq x \leq 30$ ) metallic glasses”, *J.Non-Cryst.Solids* **94** (1987) 345
82. Y.Yamada, Y.Itoh, U.Mizutani, N.Shibagaki and K.Tanaka, “Low-temperature specific heat and soft X-ray spectroscopic studies of  $Ni_{33}Zr_{67}$ -based metallic glasses containing H, B, Al and Si”, *J.Phys.F: Metal Phys.* **17** (1987) 2303
83. Y.Yamada, Y.Itoh, T.Matsuda and U.Mizutani, “Electron transport studies of  $Ni_{33}Zr_{67}$ -based metallic glasses containing H, B, Al and Si”, *J.Phys.F: Metal Phys.* **17** (1987) 2313
84. S.Kanemaki, M.Suzuki, Y.Yamada and U.Mizutani, “Low-temperature specific heat, magnetic susceptibility and electrical resistivity in Ni-Ti metallic glasses”, *J.Phys.F: Metal Phys.* **17** (1987) 105
85. U.Mizutani, “Electron transport properties of non-magnetic metallic glasses (invited)”, *Proc.of 6th Int.Conf. on Rapidly Quenched Metals (Montreal, Canada)* *Mat.Sci.Eng.* **99** (1988) 165

86. R.Zehring, P.Oelhafen, H.-J.Güntherodt, Y.Yamada and U.Mizutani, "Electronic structure of hydrogenated amorphous Ni-Zr alloys", Proc.of 6th Int.Conf. on Rapidly Quenched Metals (Montreal, Canada) Mat.Sci.Eng. **99** (1988) 253
87. Y.Yamada, Y.Itoh and U.Mizutani, "Electronic structure of  $(\text{Ni}_{33}\text{Zr}_{67})_{1-x}\text{X}_x$  (X=Ti, V, Cr, Mn, Fe, Co, Ni or Cu) ternary metallic glasses studied by low temperature specific heat measurements", Proc.of 6th Int.Conf. on Rapidly Quenched Metals (Montreal, Canada) Mat.Sci.Eng. **99** (1988) 289
88. U.Mizutani, M.Sasaura, V.L.Moruzzi and T.Matsuda, "Electronic structure and electron transport in Ca-Mg-Cu metallic glasses", Proc.of 6th Int.Conf. on Rapidly Quenched Metals (Montreal, Canada) Mat.Sci.Eng. **99** (1988) 295
89. I.Bakonyi, H.Ebert, W.Socher, J.Voitlander, I.Furo, P.Banki, A.Lovas and U.Mizutani, "Magnetic susceptibility and  $^{31}\text{P}$  nuclear magnetic resonance study of the electronic structure of amorphous and crystalline Ni-Cu-P alloys", Proc.of 6th Int.Conf. on Rapidly Quenched Metals (Montreal, Canada) Mat.Sci.Eng. **99** (1988) 301
90. R.Zehring, P.Oelhafen, H.-J.Güntherodt, Y.Yamada and U.Mizutani, "Electronic structure of  $(\text{Ni}_{33}\text{Zr}_{67})_{85}\text{X}_{15}$  (X=Ti, V, Cr, Mn, Fe, Co and Cu) metallic glasses studied by photoelectron spectroscopy", Proc.of 6th Int.Conf. on Rapidly Quenched Metals (Montreal, Canada) Mat.Sci.Eng. **99** (1988) 317
91. M.Hasegawa and U.Mizutani, "Magnetic and electronic states of the pseudobinary 3d-transition metal amorphous alloys  $(a_{1-x}b_x)_{77}\text{B}_{13}\text{Si}_{10}$  (a, b=Ti-Cu)", Physica **B149** (1988) 267
92. U.Mizutani, "A unified picture of electron transport mechanism in non-magnetic metallic glasses (invited)", Proc.of Int.Symp. on Non-Equilibrium Solid Phases of Metals and Alloys (Kyoto, Japan) (1988): Suppl. to Trans.JIM **29** (1988) 275
93. E.Yamanaka, Y.Yamada, I.Ohara, T.Matsuda and U.Mizutani, "Electronic properties of  $\text{Al}_{100-x-y}\text{Ni}_y\text{Si}_x$  and  $\text{Al}_{90-x}\text{Ni}_{10}\text{Ge}_x$  ( $10 \leq x \leq 35$ ,  $10 \leq y \leq 20$ ) metallic glasses", Proc.of Int.Symp. on Non-Equilibrium Solid Phases of Metals and Alloys (Kyoto, Japan) (1988): Suppl. to Trans.JIM **29** (1988) 329
94. S.Kanemaki, O.Takehira and U.Mizutani, "Interdependence of magnetic states, electronic states and electron transport in Zr-based binary metallic glasses M-Zr (M=Fe, Co and Ni)", Proc.of Int.Symp. on Non-Equilibrium Solid Phases of Metals and Alloys (Kyoto, Japan) (1988): Suppl. to Trans.JIM **29** (1988) 347
95. Y.Yamada, S.Murasaki, M.Suganuma and U.Mizutani, "Preparation of high- $T_c$  ceramic superconductors through oxidation of mechanically alloyed master alloy powders", Japan.J.Appl.Phys. **27** (1988) L802
96. J.Tanaka, M.Shimada, M.Hasegawa and U.Mizutani, "Optical spectra and electronic properties of  $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ ", Physica **C153-155** (1988) 651
97. U.Mizutani, K.Sato, I.Sakamoto and K.Yonemitsu, "Interplay of the Boltzmann-type ordinary transport and quantum corrections in Ag-Cu-Ge amorphous alloy system: I. Temperature dependence of electrical resistivity", J.Phys.F: Metal Phys. **18** (1988) 1995
98. I.Sakamoto, K.Yonemitsu, K.Sato and U.Mizutani, "Interplay of the Boltzmann-type ordinary transport and quantum corrections in Ag-Cu-Ge amorphous alloy system: II. Temperature dependence of Hall coefficient", J.Phys.F: Metal Phys. **18** (1988) 2009
99. U.Mizutani, C.Mishima and T.Goto, "Electron transport properties of ternary metallic glasses  $(\text{Ni}_{33}\text{Zr}_{67})_{1-x}\text{X}_x$  (X=Ti, V, Cr, Mn, Fe, Co and Cu): Magnetic effect on the electron transport properties", J.Phys.:Condens.Matter **1** (1989) 1831
100. M.Hasegawa, T.Goto and U.Mizutani, "Systematic studies of magnetism and electronic structure in 3d-transition metal pseudobinary  $(a_{1-x}b_x)_{77}\text{B}_{13}\text{Si}_{10}$  amorphous alloys", Proc.of Int.Conf. on Magnetism (Paris, France) (1988) J.Phys. **C8** (1988) 1273
101. T.Nishio, Y.Itoh, F.Ogasawara, M.Suganuma, Y.Yamada and U.Mizutani, "Superconducting and

- mechanical properties of YBCO/Ag composite superconductors”, *J.Mat.Sci.* **24** (1989) 3228
102. U.Mizutani, M.Hasegawa and S.Ohashi, “Enhanced itinerant paramagnetism in C14-type  $\text{Ti}(\text{Cu}_{1-x}\text{Al}_x)_2$  ( $0.45 \leq x \leq 0.70$ ) alloy”, *Solid State Commun.* **69** (1989) 403
103. S.Murasaki, S.Taniguchi, U.Mizutani, M.Suganuma and Y.Yamada, “High-Tc ceramic superconductors through oxidation of mechanically alloyed Y-Ba-Cu and Bi-Sr-Ca-Cu powders”, *Proc.of Int.Symp. on Superconductivity (Nagoya, Japan)* (1988) pp.281-286
104. T.Yamauchi, M.Yamada, K.Tanaka, Y.Yamada and U.Mizutani, “SXS study on local structures about aluminium atoms in (Cu, Ni)-(Ti, Zr)-Al alloy glasses”, *J.Phys.Soc.Jpn* **58** (1989) 255
105. U.Mizutani, R.Zehrer, P.Oelhafen, V.L.Moruzzi and H.-J.Güntherodt, “The photoemission valence-band structure of Hume-Rothery-type  $(\text{Ag}_{0.5}\text{Cu}_{0.5})_{100-x}\text{Ge}_x$  ( $x=20, 22.5$  and  $25$ ) metallic glasses”, *J.Phys.:Condens.Matter* **1** (1989) 1365
106. K.Kimura, H.Iwahashi, T.Hashimoto, S.Takeuchi, U.Mizutani, S.Ohashi and G.Itoh, “Electronic properties of the single-grained icosahedral phase of Al-Li-Cu”, *J.Phys.Soc.Jpn* **58** (1989) 2472
107. U.Mizutani, M.Hasegawa, K.Fukamichi, T.Goto and T.Matsuda, “Magnetism, electronic structure and thermal properties of  $(\text{a}_{1-x}\text{b}_x)_{77}\text{B}_{13}\text{Si}_{10}$  ( $\text{a}, \text{b}=\text{Ti-Cu}$ ) pseudo-binary 3d-transition metal amorphous alloys”, *Mat.Trans.JIM* **30** (1989) 953
108. T.Matsuda, I.Ohara, H.Sato, S.Ohashi and U.Mizutani, “Electronic properties for icosahedral and amorphous phases in the Mg-Zn-Al alloy system”, *J.Phys.:Condens.Matter* **1** (1989) 4087
109. S.Kanemaki, O.Takehira, K.Fukamichi and U.Mizutani, “Low-temperature specific heats and magnetic properties of  $\text{Co}_{100-x}\text{Zr}_x$  metallic glasses over a wide concentration range  $x=10-80$ ”, *J.Phys.:Condens.Matter* **1** (1989) 5903
110. S.Murasaki, S.Taniguchi, Y.Yamada, M.Suganuma, K.Kotani and U.Mizutani, “Oxidation process of mechanically alloyed Y-Ba-Cu powders”, *Extended Abstract of 1989 Int.Superconductivity Electronics Conference (ISEC'89) (Tokyo, Japan)* p.470
111. C.H.Lee, M.Mori and U.Mizutani, “Differential scanning calorimetry study of various intermetallic compounds subjected to mechanical grinding”, *J.Non-Cryst.Solids* **117/118** (1990) 733-736
112. T.Fukunaga, K.Nakamura, K.Suzuki and U.Mizutani, “Amorphization of immiscible Cu-Ta system by mechanical alloying and its structural observation”, *J.Non-Cryst.Solids* **117/118** (1990) 700-703
113. T.Matsuda, Y.Sakabe, I.Ohara and U.Mizutani, “Electronic properties of sp-electron dominant quasicrystalline alloys”, *J.Non-Cryst.Solids* **117/118** (1990) 804-807
114. H.Sato, S.Tanaka, Y.Baba, T.Matsuda and U.Mizutani, “Effect of the reduction in grain size on electron transport properties in Cu-based fcc alloys”, *J.Non-Cryst.Solids* **117/118** (1990) 379-382
115. M.Yamada, H.Tsunoda, M.Matsui, K.Tanaka and U.Mizutani, “X-ray diffraction study of Al-Ni-Si and Al-Ni-Ge alloy glasses”, *J.Non-Cryst.Solids* **117/118** (1990) 164-167
116. U.Mizutani, S.Ohashi, T.Matsuda, K.Fukamichi and K.Tanaka, “Electronic structure and electron transport properties of Al-based  $(\text{Ni}_{67}\text{X}_{33})_{1-x}\text{Al}_x$  ( $\text{X}=\text{Ti}, \text{Zr}$  and  $\text{La}$ ) amorphous alloys”, *J.Phys.:Condens.Matter* **2** (1990) 541-557
117. C.H.Lee, M.Mori, T.Fukunaga and U.Mizutani, “Effect of ambient temperature on the MA and MG processes in Ni-Zr alloy system”, *Japan.J.Appl.Phys.* **29** (1990) 540-544
118. F.Mizuno, H.Masuda, I.Hirabayashi, S.Tanaka, M.Hasegawa and U.Mizutani, “Low-temperature ferromagnetism in  $\text{La}_4\text{Ba}_2\text{Cu}_2\text{O}_7$ ”, *Nature* **345** (1990) 788-789
119. U.Mizutani and C.H.Lee, “Effect of mechanically alloying beyond the completion of glass formation for Ni-Zr alloy powders”, *J.Mat.Sci.* **25** (1990) 399-406
120. M.Matsuura, Y.Yamada and U.Mizutani, “Effects of third elements B, Si and Al on the atomic structure of the  $\text{NiZr}_2$  amorphous alloy”, *J.Non-Cryst.Solids* **122** (1990) 45-51
121. U.Mizutani, Y.Sakabe and T.Matsuda, “Electronic properties of icosahedral quasicrystals in

- Mg-Al-Ag, Mg-Al-Cu and Mg-Zn-Ga alloy systems”, *J.Phys.:Condens.Matter* **2** (1990) 6153-6167
122. U.Mizutani, Y.Sakabe, T.Shibuya, K.Kishi, K.Kimura and S.Takeuchi, “Electron transport properties of thermodynamically stable Al-Cu-Ru icosahedral quasicrystals”, *J.Phys.:Condens.Matter* **2** (1990) 6169-6178
123. U.Mizutani, T.Shimizu, T.Fukunaga, T.Koyano, K.Tanaka, M.Yamada and T.Matsuda, “Electronic structure and electron transport properties of calcium-zinc amorphous alloys and several intermetallic compounds”, *J.Phys.:Condens.Matter* **2** (1990) 7825-7839
124. T.Oka, F.Ogasawara, Y.Itoh, M.Suganuma and U.Mizutani, “Mechanical and superconducting properties of Ag/YBCO composite superconductors reinforced by the addition of Zr”, *Japan.J.Appl.Phys.* **29** (1990) 1924-1931
125. K.Sakurai, Y.Yamada, M.Itoh, C.H.Lee, T.Fukunaga and U.Mizutani, “Observation of solid-state amorphization in the immiscible system Cu-Ta”, *Appl.Phys.Lett.* **57** (1990) 2660-2662
126. M.Itoh, A.Ishida, T.Nagata, H.Sato, T.Matsuda, T.Fukunaga, A.Kamiya and U.Mizutani, “Evidence for failure of the Faber-Ziman theory and application of Edwards' self-consistent Green function theory to the electron transport in sp-electron amorphous and quasicrystalline metals”, *Mat.Sci.Eng.* **A133** (1991) 67-70
127. U.Mizutani, A.Kamiya, T.Matsuda and S.Takeuchi, “Electronic structure and transport properties of sp-electron quasicrystals in comparison with the Frank-Kasper crystals and amorphous alloys”, *Mat.Sci.Eng.* **A133** (1991) 111-114
128. T.Fukunaga, M.Mori, K.Inou and U.Mizutani, “Amorphization in an immiscible Cu-V system by mechanical alloying and its structure observed by neutron diffraction”, *Mat.Sci.Eng.* **A134** (1991) 863-866
129. M.Yamada, N.Matsui, K.Kurita, K.Tanaka, T.Fukunaga and U.Mizutani, “X-ray structure analysis of Ni-Ti-Al and Cu-Ti-Al alloy glasses”, *Mat.Sci.Eng.* **A134** (1991) 983-986
130. C.H.Lee, T.Fukunaga and U.Mizutani, “Temperature dependence of mechanical alloying and grinding in Ni-Zr, Cu-Ta and Fe-B alloy systems”, *Mat.Sci.Eng.* **A134** (1991) 1334-1337
131. K.Sakurai, Y.Yamada, C.H.Lee, T.Fukunaga and U.Mizutani, “Solid state amorphization in the Cu-Ta alloy system”, *Mat.Sci.Eng.* **A134** (1991) 1414-1417
132. A.Matsumuro, K.Kasumi, U.Mizutani and M.Senoo, “Superconducting and mechanical properties of YBCO/Ag composites fabricated at high pressures up to 5.4 Gpa”, *J.Mat.Sci.* **26** (1991) 737-742
133. U.Mizutani, A.Kamiya, T.Matsuda, K.Kishi and S.Takeuchi, “Electronic specific heat measurements for quasicrystals and Frank-Kasper crystals in Mg-Al-Ag, Mg-Al-Cu, Mg-Al-Zn, Mg-Ga-Zn and Al-Li-Cu alloy systems”, *J.Phys.:Condens.Matter* **3** (1991) 3711-3718
134. U.Mizutani, A.Kamiya, T.Fukunaga and T.Matsuda, “Atomic and electronic properties of icosahedral quasicrystals and crystalline approximants in quaternary  $Mg_{39.5}Zn_{40.0}(Ga_{1-x}Al_x)_{20.5}$  alloy system”, *Proc.of China-Japan Seminars on Quasicrystals (Tokyo 1989, Beijing 1990)* edited by K.H.Kuo and T.Ninomiya (World Scientific, Inc. Singapore) (1991) pp.248-255
135. T.Oka, Y.Itoh, Y.Yanagi, H.Tanaka and U.Mizutani, “Mechanical properties of Zr-YBCO/Ag sintered superconducting composites”, *Proc.of Int.Conf. on Materials and Mechanisms of Superconductivity High Temperature Superconductors III (Kanazawa, Japan) (1991):Physics* **C185-189** (1991) 507-510
136. T.Oka, Y.Itoh, Y.Yanagi, H.Tanaka, S.Takashima and U.Mizutani, “Mechanical and magnetic properties of Zr-YBCO superconducting composites”, *Proc. of the 4th Int.Symp. on Superconductivity (ISS'91) (Tokyo, Japan) (1991)* pp.651-654
137. T.Koyano, E.Kita, A.Tasaki, C.H.Lee, T.Fukunaga and U.Mizutani, “Formation and magnetic properties of iron-nitrides by mechanical alloying”, *Proc.of Int.Symp. on 3d-Transition-Semimetal Thin Films (Sendai, Japan) (1991)* pp.65-68



138. K.Edagawa, K.Suzuki, M.Ichihara, S.Takeuchi, A.Kamiya and U.Mizutani, "Structure of a high-order icosahedral approximant phase in Mg-Ga-Al-Zn system", *Phil.Mag.Lett.* **64** (1991) 95-103
139. T.Oka, Y.Itoh, Y.Yanagi, H.Tanaka, S.Takashima and U.Mizutani, "Metallurgical reactions and their relationships to enhanced mechanical strength in Zr-bearing YBCO composite superconductors", *Japan.J.Appl.Phys.* **31** (1992) 1760-1764
140. S.Kanemaki, O.Takehira, T.Goto and U.Mizutani, "Magnetic, electronic and electron transport properties of amorphous  $(Co_{0.9}Zr_{0.1})_{100-x}X_x$  ( $X=Al, Si, Cu, Ge$  and  $Zr$ ) pseudo-binary alloys", *J.Phys.:Condens.Matter* **4** (1992) 2217-2230
141. T.Fukunaga, M.Mori, M.Misawa and U.Mizutani, "Structural observation of metastable phases prepared by MA in V-M ( $M=Fe, Cu$ ) systems", *Mat.Sci.Forum* **88-90** (1992) 663-670
142. T.Fukunaga, M.Misawa, K.Suzuki and U.Mizutani, "Chemical short-range order structure of Ni-Ti neutron zero scattering amorphous powders synthesized by MA", *Mat.Sci.Forum* **88-90** (1992) 325-332
143. C.H.Lee, M.Mori, T.Fukunaga, K.Sakurai and U.Mizutani, "Structural evidence for the amorphization of mechanically alloyed Cu-Ta powders studied by neutron diffraction", *Mat.Sci.Forum* **88-90** (1992) 399-406
144. U.Mizutani, C.H.Lee, T.Fukunaga, H.Tanaka and K.Tanaka, "Chemical evidence for the amorphization of mechanically alloyed Cu-Ta powders studied by XPS and low-temperature specific heat measurements", *Mat.Sci.Forum* **88-90** (1992) 407-414
145. U.Mizutani, C.Imaeda, S.Murasaki and T.Fukunaga, "Mechanical alloying of a mixture of Y, Cu and Ba elemental powders in the formation process of the  $YBa_2Cu_3O_{7-\delta}$  superconducting oxides", *Mat.Sci.Forum* **88-90** (1992) 415-422
146. T.Koyano, C.H.Lee, T.Fukunaga and U.Mizutani, "Formation of iron-nitrides by mechanical alloying in  $NH_3$  atmosphere", *Mat.Sci.Forum* **88-90** (1992) 809-816
147. T.Oka, Y.Itoh, Y.Yanagi, H.Tanaka, S.Takashima, Y.Yamada and U.Mizutani, "Critical current density and mechanical strength of  $YBa_2Cu_3O_{7-\delta}$  superconducting composites containing Zr, Ag and  $Y_2BaCuO_5$  dispersions by melt-processing", *Physica C* **200** (1992) 55-64
148. T.Fukunaga, K.Suzuki and U.Mizutani, "Short range structure of  $(Cu_{40}Ti_{60})_x(Ni_{40}Ti_{60})_{1-x}$  ( $0 \leq x \leq 1$ ) ternary metallic glasses studied by neutron diffraction", *J.Non-Cryst.Solids* **150** (1992) 10-13
149. T.Fukunaga, K.Suzuki and U.Mizutani, "Atomic structure of  $Al_{55}(Cr_{1-x}Mn_x)_{15}Si_{30}$  metallic glasses observed by neutron diffraction", *J.Non-Cryst.Solids* **150** (1992) 15-18
150. K.Sakurai, M.Mori and U.Mizutani, "Extended X-ray absorption fine-structure studies on ball-milled powders of the immiscible system Cu-V", *Phys.Rev.* **B46** (1992) 5711-5714
151. T.Koyano, T.Takizawa, T.Fukunaga, U.Mizutani, S.Kamizuru, E.Kita and A.Tasaki, "Mechanical alloying process of Fe-Cr powders studied by magnetic measurements", *J.Appl.Phys.* **73** (1993) 429-433
152. T.Matsuda, U.Mizutani, K.Hashimoto, Y.Itoh and K.Hiraga, "Effects of Structural Quality and Lattice Periodicity on Electronic Properties in Mg-Ga-Al-Zn Quasicrystalline and Approximant Phases", *Mat.Trans.JIM* **34** (1993) 95-101
153. U.Mizutani, T.Takeuchi and T.Fukunaga, "Formation of Quasicrystals and Approximant Crystals by Mechanical Alloying in Mg-Al-Zn Alloy System", *Mat.Trans.JIM* **34** (1993) 102-108
154. H.Tanaka, S.Takayama, M.Hasegawa, T.Fukunaga, U.Mizutani, A.Fujita and K.Fukamichi, "Electronic Structure and magnetism of amorphous  $Co_{1-x}B_x$  alloys", *Phys.Rev.* **B47** (1993) 2671-2677
155. U.Mizutani, M.Hasegawa, K.Fukamichi, Y.Hattori, Y.Yamada, H.Tanaka and S.Takayama, "Magnetic, electronic and electron-transport properties of amorphous  $(Co_{0.85}B_{0.15})_{100-x}X_x$  ( $X=B, Al, Si$  and  $V$ ) alloys", *Phys.Rev.* **B47** (1993) 2678-2688
156. C.H.Lee, T.Fukunaga, Y.Yamada, U.Mizutani and H.Okamoto, "Amorphization Process Induced by Mechanical Alloying in the Immiscible Cu-Ta System", *J.Phase Equilibria* **14** (1993) 167-171

157. U.Mizutani, "Electron Transport in Non-Periodic Metallic Systems: Amorphous Alloys and Quasicrystals", *Phys.Stat.Sol. (b)* **176** (1993) 9-30
158. U.Mizutani, T.Takeuchi, T.Fukunaga and S.Murasaki, "Acceleration dependence of formation of quasicrystals and amorphous alloys by a high-energy planetary ball-mill", *J.Mat.Sci.Letters* **12** (1993) 629-632
159. U.Mizutani, "Electron Transport in Non-Periodic Systems Including Amorphous Metals and Quasicrystals", *Mat.Sci.Eng.* **B19** (1993) 82
160. U.Mizutani, K.Tanaka, T.Matsuda, N.Suzuki, T.Fukunaga, Y.Ozaki, Y.Yamada and K.Nakayama, "Electronic Structure and Electron Transport Properties of Amorphous Mg-Ni-La and Mg-Cu-Y Alloys", *J.Non-Cryst.Solids* **156-158** (1993) 297-301
161. T.Fukunaga, K.Okasaka and U.Mizutani, "Chemical Short-Range Order in  $(\text{Ti}_{76}\text{Ni}_{24})_x(\text{Ti}_{70}\text{Cu}_{30})_{1-x}$  Neutron Zero Scattering Amorphous Alloys", *J.Non-Cryst.Solids* **156-158** (1993) 120-124
162. K.Pekala, M.Pekala, U.Mizutani and P.Jaskiewicz, "Magnetic and Electrical Study of Amorphous Metallic Alloys Co-B-V and Co-B-Ti", *J.Non-Cryst.Solids* **156-158** (1993) 324-327
163. U.Mizutani, T.Matsuda, Y.Itoh, K.Tanaka, H.Domae, T.Mizuno, S.Murasaki, Y.Miyoshi, K.Hashimoto and Y.Yamada, "Electronic Structure and Electron Transport Properties of Quasicrystals and Approximant Crystals in Al-TM and Mg-Ga-Al-Zn Alloy Systems", *J.Non-Cryst.Solids* **156-158** (1993) 882-886
164. T.Takeuchi, S.Murasaki, A.Matsumuro and U.Mizutani, "Formation of Quasicrystals and Approximant Crystals by Mechanical Alloying in Mg-Al-Zn Alloy System", *J.Non-Cryst.Solids* **156-158** (1993) 914-917
165. Y.Yamada, T.Matsumoto, F.Izumi, N.Yamada, Y.Kodama, U.Mizutani, Y.Morii and S.Funabashi, "Pressure Effects on  $T_c$  of  $\text{Y}_2\text{Ba}_4(\text{Cu}_{1-x}\text{Co}_x)_7\text{O}_{15}$ ", *Proc.of the 5th Int.Symp.on Superconductivity (ISS'92)* (November 16-19, 1992) p.319-322
166. Y.Yanagi, Y.Itoh, T.Oka, H.Tanaka, S.Takashima, Y.Yamada and U.Mizutani, "Mechanical and Superconducting Properties of Melt-Processed YBCO Composites Containing  $\text{BaZrO}_3$ , Ag and 211-Phase", *Proc.of the 5th Int.Symp.on Superconductivity (ISS'92)* (November 16-19, 1992) p.799-802
167. T.Koyano, T.Takizawa, T.Fukunaga and U.Mizutani, "Mechanical Alloying Processes of a Mixture of  $\alpha$ -Fe and  $\gamma$ '- $\text{Fe}_4\text{N}$  Powders", *Jpn.J.Appl.Phys.* **32** (1993) L1524-L 1526
168. T.Koyano, C.H.Lee, T.Fukunaga, U.Mizutani, S.Ikeda, Y.Higuchi, M.Nishikawa, E.Kita and A.Tasaki, "Structural Studies of Multilayered Films Composed of Immiscible Pairs Cu and Ta", *J.Mag.Mat.* **126** (1993) 161-163
169. U.Mizutani, T.Takeuchi, T.Fukunaga, T.Koyano and K.Kaneko, "Construction of Milling Intensity-Temperature-Transformation Diagrams for Various Systems Subjected to Mechanical Alloying", *Proc. of 1st Int.Conf. on Processing Materials for Properties* (Edited by H.Henein and T.Oki, The Minerals, Metals & Materials Society, 1993) pp.671-674
170. U.Mizutani, "A unified picture for electron scattering mechanisms in amorphous alloys and quasicrystals", *Current Topics in Amorphous Materials: Physics & Technology* (Edited by Y.Sakurai, Y.Hamakawa, T.Masumoto, K.Shirae and K.Suzuki, 1993) pp.74-89
171. U.Mizutani, T.Oka, A.Inoue and T.Masumoto, "Application of amorphous superconductors to liquid-helium level indicators", *Current Topics in Amorphous Materials: Physics & Technology* (Edited by Y.Sakurai, Y.Hamakawa, T.Masumoto, K.Shirae and K.Suzuki, 1993) pp.185-190
171. U.Mizutani, Y.Hoshino, Y.Hanaue, T.Takeshita, A.Fujita and K.Fukamichi, "Low Temperature Specific Heat Studies of Amorphous and Crystalline Er-Ru Alloys", *Materials Science and Engineering* **B23** (1994) 66-70
172. Y.Yamada, T.Yamanishi, S.Takashima, T.Biwa, S.Horii, A.Matsushita, T.Matsumoto, N.Yamada,

- Y.Kodama, K.Kawamoto, M.Otsuka and U.Mizutani, "Pressure effects on  $T_c$  in  $(Y_{1-x}Pr_x)_2Ba_4Cu_7O_{15-\delta}$  superconductors", Proc.of the 6th Int.Symp.on Superconductivity (ISS'93) (Oct.26-29, 1993, Hiroshima) pp.367-370
173. S.Takashima, Y.Yamada, T.Oka, Y.Itoh, Y.Yanagi, Y.Kodama, K.Kawamoto, I.Hirabayashi and U.Mizutani, "Synthesis of melt grown  $Y_2Ba_4Cu_7O_{15-\delta}$  bulk superconductor using high oxygen pressure technique", Proc.of the 6th Int.Symp.on Superconductivity (ISS'93) (Oct.26-29, 1993, Hiroshima) pp.527-530
174. Y.Itoh, Y.Yanagi, T.Oka, M.Yoshikawa, S.Takashima, M.Sasaki, Y.Yamada and U.Mizutani, "Microstructure and Superconducting Properties of Low Temperature Melt-Processed  $YBa_2Cu_3O_{7-\delta}$  Composites with Fine  $Y_2BaCuO_5$  and  $Yb_2BaCuO_5$  Addition", Proc.of the 6th Int.Symp.on Superconductivity (ISS'93) (Oct.26-29, 1993, Hiroshima) pp.847-850
175. T.Takeuchi, T.Koyano, M.Utumi, T.Fukunaga, K.Kaneko and U.Mizutani, "Effects of ambient temperature and acceleration on various mechanical alloying products Mg-Al-Zn quasicrystals, Ni-Zr amorphous alloys and amorphous Se", Materials Science and Engineering **A179/A180** (1994) 224-228
176. U.Mizutani, H.Sugiura, Y.Yamada, Y.Sugiura and T.Matsuda, "Electronic structure and electron transport properties of Al-Cu-Y and Mg-Cu-Y amorphous alloys", Materials Science and Engineering **A179/A180** (1994) 132-136
177. M.Matsuura, T.Fukunaga and U.Mizutani, "Evolution of medium-range order of  $Mg_{0.5}Ni_{0.3}La_{0.2}$  metallic glasses at a supercooled liquid temperature", Materials Science and Engineering **A179/A180** (1994) 464-468
178. T.Takeuchi, Y.Yamada, T.Fukunaga and U.Mizutani, "Studies of Mg-Al-Pd icosahedral quasicrystals and approximant crystals synthesized by the mechanical alloying process", Materials Science and Engineering **A181/A182** (1994) 828-832
179. Y.Nakamura and U.Mizutani, "Study of the electronic structure and electron transport properties of Al-Cu-Ru quasicrystals", Materials Science and Engineering **A181/A182** (1994) 790-793
180. Z.Diao, Y.Yamada, T.Fukunaga, T.Matsuda and U.Mizutani, "Electronic structure and electron transport properties of amorphous Ca-Al-Ga and Ca-Mg-Ga alloys", Materials Science and Engineering **A181/A182** (1994) 1047-1050
181. E.Belin, Y.Miyoshi, Y.Yamada, T.Ishikawa, T.Matsuda and U.Mizutani, "Electronic structure, magnetic properties and electron transport in  $Al_{82.6-x}Mn_{17.4}Si_x$  ( $4 \leq x \leq 16$ ) quasicrystals and approximant crystals", Materials Science and Engineering **A181/A182** (1994) 730-733
182. K.Hashimoto, Y.Yamada, T.Yamauchi, T.Tanaka, T.Matsuda and U.Mizutani, "Electronic structure and electron transport properties of Mg-Al-Pd quasicrystals and approximant crystals", Materials Science and Engineering **A181/A182** (1994) 785-789
183. T.Matsuda, K.Shirai, H.Sato and U.Mizutani, "Temperature dependence of thermopower in non-magnetic metallic glasses", Materials Science and Engineering **A181/A182** (1994) 926-931
184. T.Koyano, K.Chatani, T.Fukunaga and U.Mizutani, "Magnetic properties of Fe-V powders produced by mechanical alloying", Materials Science and Engineering **A181/A182** (1994) 1277-1280
185. N.Ichikawa, O.Matsumoto, T.Hara, T.Kitahara, T.Yamauchi, T.Matsuda, T.Takeuchi and U.Mizutani, "Preparation of Al-Pd-Mn Quasicrystal Films by Laser Ablation Method", Jpn.J.Appl.Phys. **33** (1994) L736-L738
186. K.Sakurai, C.H.Lee, N.Kuroda, T.Fukunaga and U.Mizutani, "Nitrogen effect in mechanical alloying of immiscible Cu-V: Extended X-ray absorption fine structure study", J.Appl.Phys. **75** (1994) 7752
187. K.Tanaka, K.Tanahashi, H.Takaki and U.Mizutani, "Electronic Structure of Hydrided La-Ni-Al Alloy Glasses Studied by X-Ray Photoelectron Spectroscopy", Z.Phys.Chemie **183** (1994) S.131-139
188. Y.Yamada, S.Horii, N.Yamada, Z.Guo, Y.Kodama, K.Kawamoto, U.Mizutani and I.Hirabayashi,

- “High Oxygen Pressure Synthesis of the PrBa<sub>2</sub>Cu<sub>4</sub>O<sub>8</sub> Compound”, *Physica* **C231** (1994) 131-136
189. U.Mizutani, Y.Yamada, T.Takeuchi, K.Hashimoto, E.Belin, A.Sadoc, T.Yamauchi and T.Matsuda, “Valence Band Structure and Electron Transport Properties in Rhombic Triacanthedron and Mackay Icosahedral Types of Al-Mg-Pd and Other Quasi-Crystals”, *J.Phys.:Condens.Matter* **6** (1994) 7335-7350
190. T.Fukunaga, N.Kuroda, C.H.Lee, T.Koyano and U.Mizutani, “Nitrogen Induced Amorphization Observed by X-ray and Neutron Diffractions in the Immiscible V-Cu System”, *J.Non-Cryst.Solids* **176** (1994) 98-103
191. Y.Yamada, T.Okamoto, U.Mizutani and I.Hirabayashi, “Low-temperature specific heat studies of Bi-Sr-Cu-O”, *Physica C* **232** (1994) 269-276
192. Y.Yanagi, Y.Itoh, M.Yoshikawa, T.Oka, M.Sasaki, Y.Yamada and U.Mizutani, “The Microstructure and Superconducting Properties of Melt-processed YBCO Samples Containing RE-211 Particles”, *Physica C* **235-240** (1994) 445-446
193. Y.Itoh, Y.Yanagi, M.Yoshikawa, T.Oka, S.Harada, T.Sakakibara, Y.Yamada and U.Mizutani, “A Construction of High Temperature Superconducting Motor Using YBCO Bulk Magnets”, *Physica C* **235-240** (1994) 3445-3446
194. U.Mizutani and C.H.Lee, “Mechanical Alloying in Cu-V and Cu-Ta Systems Characterized by Positive Heat of Mixing (Overview)”, *Mat.Trans.JIM*, **36** No.2, (1995) 210-217
195. Y.Itoh, Y.Yanagi, M.Yoshikawa, T.Oka and U.Mizutani, “High-Temperature Superconducting Motor Using Y-Ba-Cu-O Bulk Magnets”, *Japan.J.Appl.Phys.* **34** (1995) 5574-5578
196. T.Takeuchi and U.Mizutani, “Electronic Structure, Electron Transport Properties, and Relative Stability of Icosahedral Quasicrystals and Their 1/1 and 2/1 Approximants”, *Phys.Rev.* **B52** (1995) 9300-9308
197. E.Belin, Z.Dankhazi, U.Mizutani and A.Sadoc, “Electronic Distributions and Local Range Order in Crystals and Quasicrystals”, *J.Non-Cryst.Solids* **192&193** (1995) 312-315
198. T.Koyano, U.Mizutani and H.Okamoto, “Evaluation of the Controversial  $\sigma_m(\text{Cr})+(\alpha\text{-Fe})$  Eutectoid Temperature in the Fe-Cr System by Heat Treatment of Mechanically Alloyed Powder”, *J.Mat.Sci.Lett.* **14** (1995) 1237-1240
199. A.Takagi, T.Yamazaki, T.Oka, Y.Yanagi, Y.Itoh, M.Yoshikawa, Y.Yamada and U.Mizutani, “Preparation of Melt-Textured NdBa<sub>2</sub>Cu<sub>3</sub>O<sub>y</sub> Bulk with Nd<sub>4</sub>Ba<sub>2</sub>Cu<sub>2</sub>O<sub>10</sub> Addition”, *Physica* **C250** (1995) 222-226
200. T.Fukunaga, K.Okasaka, T.Koyano and U.Mizutani, “Chemical Short-Range Structure of (Ti<sub>0.76</sub>Ni<sub>0.24</sub>)<sub>100-x</sub>V<sub>x</sub> Amorphous Alloys”, *Physica* **B213&214** (1995) 523-525
201. T.Fukunaga, E.Ishikawa, T.Koyano and U.Mizutani, “Nitrogen Induced Amorphization Observed by Neutron Diffraction in the Cr-Fe System”, *Physica* **B213&214** (1995) 526-528
202. E.Belin, Z.Dankhazi, A.Sadoc, U.Mizutani, H.Müller, K.Kirchmayr, “Electronic Structure of Mackay and Rhombictriacontahedron Type Al-Pd-Mg Quasicrystals”, *Proc. of the 5th Int.Conf. on Quasicrystals*, (Avignon, 22-26 May 1995) edited by C.Janot and R.Mosseri, pp.444-447
203. T.Takeuchi, Y.Yamada, U.Mizutani, Y.Honda, K.Edagawa and S.Takeuchi, “Valence Band Structure near the Fermi Level in the Al-Pd-Re Icosahedral Quasicrystal with an Extremely Large Resistivity”, *Proc. of the 5th Int.Conf. on Quasicrystals*, (Avignon, 22-26 May 1995) edited by C.Janot and R.Mosseri, pp.534-538
204. S.Yamaguchi, T.Takeuchi, Y.Yamada and U.Mizutani, “Electron Transport Properties and Electronic Structure of Al-Mg-Pd Mackay-Type Icosahedral Quasicrystals”, *Proc. of the 5th Int.Conf. on Quasicrystals*, (Avignon, 22-26 May 1995) edited by C.Janot and R.Mosseri, pp.548-551
205. U.Mizutani, K.Chatani, T.Takeuchi and Y.Yamada, “Studies of the Transformation Process between Cubic 1/1-Approximant and Icosahedral Quasicrystal in Al-Mg-Zn System”, *Proc. of the 5th Int.Conf. on*

- Quasicrystals, (Avignon, 22-26 May 1995) edited by C.Janot and R.Mosseri, pp.676-679
206. Y.Itoh, Y.Yanagi, M.Yoshikawa, T.Oka, M.Tsuchimoto, Y.Yamada and U.Mizutani, “Flux Trapping Characteristics of Melt-Processed Y-Ba-Cu-O Bulk Magnet by Pulse Magnetization”, Proc.of the 8th International Symposium on Superconductivity (ISS'95) Hamamatsu, p.707-710
207. U.Mizutani, “Self-Consistent Atomic and Electronic Structure Determination and Electron Transport Mechanism in Ternary Amorphous Al-Cu-Y and Mg-Cu-Y Alloys (invited)”, Processing and Properties of Nanocrystalline Materials, (Edited by C.Suryanarayana, J.Singh, F.H.Froes) (TMS, 1996) pp.165-176
208. T.Biwa, W.Yagi and U.Mizutani, “Evaluation of Low-Temperature Specific Heats and Thermal Conductivities of Er-Ag Alloys as Regenerator Materials”, Jpn.J.Appl.Phys. **35** (1996) 2244-2248
209. Y.Itoh and U.Mizutani, “Pulsed Field Magnetization of Melt-Processed Y-Ba-Cu-O Superconducting Bulk Magnet”, Jpn.J.Appl.Phys. **35** (1996) 2114-2125
210. T.Fukunaga, H.Sugiura, N.Takeichi and U.Mizutani, “Experimental Studies of Atomic Structure, Electronic Structure and the Electron Transport Mechanism in Amorphous Al-Cu-Y and Mg-Cu-Y Ternary Alloys”, Phys.Rev. **B54** (1996) 3200-3210
211. Y.Itoh, Y.Yanagi, M.Yoshikawa, T.Oka, Y.Yamada and U.Mizutani, “Pulsed Field Magnetization of Melt-Processed Y-Ba-Cu-O Bulk Superconductor with No Weak Links”, Jpn.J.Appl.Phys. **35** (1996) L1173-L1176
212. T.Fukunaga, M.Utsumi, H.Akatsuka, M.Misawa and U.Mizutani, “Structure of amorphous Se prepared by milling”, J.Non-Cryst.Solids **205-207** (1996) 531-535
213. T.Fukunaga, T.Ishizuka, H.Ishihara, T.Koyano and U.Mizutani, “Structure of sputter-deposited V-Si amorphous alloys”, J.Non-Cryst.Solids **205-207** (1996) 660-664
214. S.Ikeda, T.Oka, Y.Yamada, M.Yoshikawa, Y.Yanagi, Y.Itoh and U.Mizutani, “Effect of Nd422 Addition on  $J_c$  in Nd123 Melt-Textured Bulk Superconductor”, Jpn.J.Appl.Phys. **36** (1997) L345-L348
215. U.Mizutani, W.Iwakami and T.Fujiwara, “Electronic structure calculations based on the atomic structure determined by the Rietveld analysis for a series of the Al-Mg-Zn 1/1-approximants”, Proc.of 6th Int.Conf. on Quasicrystals, edited by S.Takeuchi and T.Fujiwara (Tokyo, 1997)
216. S.Kobayashi, T.Takeuchi, Y.Watanabe, T.Matsuda and U.Mizutani, “Electronic properties of the Mg-Zn-Y icosahedral quasicrystals”, Proc.of 6th Int.Conf. on Quasicrystals, edited by S.Takeuchi and T.Fujiwara (Tokyo, 1997)
217. T.Matsuda, T.Ozaki, H.Sato and U.Mizutani, “Electronic properties in Al-Mg-Pd icosahedral quasicrystals”, Proc.of 6th Int.Conf. on Quasicrystals, edited by S.Takeuchi and T.Fujiwara (Tokyo, 1997)
218. H.Yamada, W.Iwakami, T.Takeuchi, M.Takata, S.Yamaguchi, T.Matsuda and U.Mizutani, “Atomic and electronic structures of the Al-Cu-Fe-Si 1/1-approximant”, Proc.of 6th Int.Conf. on Quasicrystals, edited by S.Takeuchi and T.Fujiwara (Tokyo, 1997)
219. T.Shinohara, F.Wagatsuma, S.Yamaguchi and U.Mizutani, “NMR studies of RT- and MI-type quasicrystals and Frank-Kasper-type approximants in the Al-Mg-Pd alloy system”, Proc.of 6th Int.Conf. on Quasicrystals, edited by S.Takeuchi and T.Fujiwara (Tokyo, 1997)
220. K.Soda, U.Mizutani, Y.Yokoyama, R.Note, A.Inoue, M.Fujisawa, S.Shin, S.Suga, A.Sekiyama, T.Suzaki, T.Kinishi, T.Matsushita and T.Miyahara, “Spectroscopic study of decagonal single quasicrystal Al<sub>72</sub>Ni<sub>12</sub>Co<sub>16</sub> with use of synchrotron radiation”, Proc.of 6th Int.Conf. on Quasicrystals, edited by S.Takeuchi and T.Fujiwara (Tokyo, 1997)
221. U.Mizutani, T.Ishizuka and T.Fukunaga, “Interrelations of atomic structures, electronic structures, electron transport, and magnetic properties across the metal-insulator transition for amorphous V<sub>x</sub>Si<sub>100-x</sub> (7≤x≤74) alloys”, J.Phys.:Condens. Matter **9** (1997) 5333-5353
222. R.Kondo, T.Hashimoto, K.Edagawa, S.Takeuchi, T.Takeuchi and U.Mizutani, “Electrical Properties of Zn-Mg-RE (RE=Y, Gd) Icosahedral Quasicrystals”, J.Phys.Soc.Jpn **66** No.4 (1997) 1097-1102

223. Y.Yanagi, Y.Itoh, M.Yoshikawa, T.Oka, Y.Yamada and U.Mizutani, "Low temperature pulsed field magnetization of melt-processed Y-Ba-Cu-O superconducting bulk magnet", Proc.of 9th Int.Symp. on Superconductivity, (October 1996, Sapporo), pp.733-736
224. Y.Itoh, Y.Yanagi, M.Yoshikawa, T.Oka, Y.Yamada and U.Mizutani, "Flux motion during pulsed field magnetization in melt-processed Y-Ba-Cu-O superconducting bulk magnet", Proc.of 9th Int.Symp. on Superconductivity, (October 1996, Sapporo), pp.793-796
225. S.Horii, Y.Yamada, N.Yamada, I.Hirabayashi and U.Mizutani, "Synthesis and Physical Properties of  $(Pr_{1-x}RE_x)Ba_2Cu_4O_8$  Oxides (RE=Y, Yb, Nd, Gd)", Physica C **282-287** (1997) 809-810
226. Y.Nishino, M.Kato, S.Asano, K.Soda, M.Hayasaki and U.Mizutani, "Semiconductor-like Behavior of Electrical Resistivity in Heusler-type  $Fe_2VAl$  Compound", Phys.Rev.Letters **79** (1997) 1909-1912
227. U.Mizutani, W.Iwakami, T.Takeuchi, M.Sakata and M.Takata, "Composition dependence of the atomic structure of  $Al_xMg_{39.5}Zn_{60.5-x}$  ( $20.5 \leq x \leq 50.5$ ) 1/1-1/1-1/1 approximants determined by the Rietveld method", Phil.Mag.Letters **76** (1997) 349-356
228. W.Yagi, H.Iwata and U.Mizutani, "Studies of Low Temperature Specific Heats and Thermal Conductivities of the CsCl-type  $(Pr_{1-x}Nd_x)Ag$  ( $0 \leq x \leq 1$ ) Intermetallic Compounds: Application to Regenerator Materials", Jpn.J.Appl.Phys. **36** (1997) 5638-5643
229. Y.Itoh, Y.Yanagi and U.Mizutani, "Flux motion during pulsed field magnetization in Y-Ba-Cu-O superconducting bulk magnet", J.Appl.Phys. **82** (1997) 5600-5611
230. A. Terasaki, Y. Yanagi, Y. Itoh, M. Yoshikawa, T. Oka, H. Ikuta and U. Mizutani, "Flux Motion during Pulsed-Field Magnetization in Melt-Processed YBCO", Proceedings of the 10th International Symposium on Superconductivity (Oct. 27--30, 1997, Gifu) pp.945-948
231. S. Ikeda, M. Yoshikawa, Y. Yanagi, Y. Itoh, T. Oka, H. Ikuta, and U. Mizutani, "Preparation of c-Axis Oriented Nd-Ba-Cu-O Melt-Textured Bulk With Ag Addition", Proceedings of the 10th International Symposium on Superconductivity (Oct. 27--30, 1997, Gifu) pp.705-708
232. A. Mase, S. Ikeda, M. Yoshikawa, Y. Yanagi, Y. Itoh, T. Oka, H. Ikuta, and U. Mizutani, "Preparation of Large c-Axis Oriented Melt-Processed Sm-Ba-Cu-O and Their Superconducting Properties", Proceedings of the 10th International Symposium on Superconductivity (Oct. 27--30, 1997, Gifu) pp.737-740
233. S. Iwata, S. Nagaya, H. Ikuta, and U. Mizutani, "Preparation and Superconducting Properties of Melt-Processed YBCO Bulk by Controlling Oxygen Partial Pressure", Proceedings of the 10th International Symposium on Superconductivity (Oct. 27--30, 1997, Gifu) pp.657-660
234. Y. Yanagi, Y. Itoh, M. Yoshikawa, T. Oka, A. Terasaki, H. Ikuta, and U. Mizutani, "Pulsed Field Magnetization of Y-Ba-Cu-O Superconducting Bulk Magnet Cooled by Refrigerator", Proceedings of the 10th International Symposium on Superconductivity (Oct.27--30, 1997, Gifu) pp.941-944
235. N.Takeichi, H.Sato and U.Mizutani, "Theoretical studies of atomic structure and electronic structure in ternary amorphous Al-Cu-Y and Mg-Cu-Y alloys", J.Phys.:Condensed Matter **9** (1997) 10145-10157
236. U.Mizutani, "Role of the pseudogap in the electron transport of quasicrystals and their approximants", J.Phys.:Condensed Matter **10** (1998) 4609-4623
237. S.Horii, Y.Yamada, H.Ikuta, N.Yamada, Y.Kodama, S.Katano, Y.Funahashi, S.Morii, A.Matsushita, T.Matsumoto, I.Hirabayashi and U.Mizutani, "Synthesis and superconducting properties of  $(Y_{1-x}Pr_x)Ba_2Cu_4O_8$  and  $(Y_{1-x}Pr_x)_2Ba_4Cu_7O_{15-y}$  compounds", Physica C **302** (1998) 10-22
238. W.Yagi, H.Iwata and U.Mizutani, "Evaluation of Low-Temperature Specific Heats and Thermal Conductivities of  $REGa_2$  (RE=Pr, Nd, Gd, Tb, Dy, Ho and Er) and  $Dy_{1-x}Ho_xGa_2$  ( $0 \leq x \leq 1$ ) Intermetallic Compounds as Regenerator Materials", Jpn.J.Appl.Phys. **37** (1998) 4787-4791
239. N.Takeichi, T.Fukunaga and U.Mizutani, "Development in the Short- and Medium-Range Structure in Amorphous  $Ca_{10}Mg_{90-x}Ga_x$  ( $0 \leq x \leq 40$ ) Alloys", J.Phys.:Condensed Matter **45** (1998) 10179-10192

240. N.Takeichi, H.Sato, T.Fukunaga and U.Mizutani, "Electronic Structure and Electron Transport Properties of Amorphous  $\text{Ca}_{10}\text{Mg}_{90-x}\text{Ga}_x$  ( $0 \leq x \leq 40$ ) Alloys", *J.Phys.:Condensed Matter* **45** (1998) 10193-10206
241. T.Biwa, H.Ikuta and U.Mizutani, "Evaluation of Cu and Pb Particles with Different Sizes as Regenerator Materials in the Gifford-McMahon-Cycle Refrigerator", *Jpn.J.Appl.Phys.* **37** (1998) 5808-5814
242. H.Ikuta, A.Mase, Y.Yanagi, M.Yoshikawa, Y.Itoh, T.Oka and U.Mizutani, "Melt-processed Sm-Ba-Cu-O superconductors trapping strong magnetic field", *Supercond.Sci.Technol.* **11** (1998) 1345-1347
243. T.Fukunaga, K.Nagano, U.Mizutani, H.Wakayama and Y.Fukushima, "Structural change of graphite subjected to mechanical milling", *J.Non-Cryst.Solids* **232-234** (1998) 416-420
244. T.Fukunaga, S.Kajikawa, Y.Hokari and U.Mizutani, "The structure of amorphous Se-S prepared by mechanical alloying", *J.Non-Cryst.Solids* **232-234** (1998) 465-469
245. T.Takeuchi, U.Mizutani, S.Yamaguchi, T.Fukunaga, T.Mizuno and N.Tanaka, "Local atomic structure and the valence band structure of the rhombic-triacontahedron quasicrystals, its 1/1 approximant and the Mackay-icosahedral quasicrystal in the Al-Mg-Pd alloy system", *Phys.Rev.* **B58** (1998) 11345-11353
246. H.Ikuta, S.Ikeda, A.Mase, M.Yoshikawa, Y.Yanagi, Y.Itoh, T.Oka and U.Mizutani, "Melt-Processing of Ag-added LRE-Ba-Cu-O (LRE=Nd, Sm)", *Applied Superconductivity* **6** (1998) 109-117
247. U.Mizutani, T.Oka, Y.Itoh, Y.Yanagi, M.Yoshikawa and H.Ikuta, "Pulsed-field Magnetization applied to high-Tc superconductors", *Applied Superconductivity* **6** (1998) 235-246
248. K.Soda, K.Nozaawa, Y.Yanagida, K.Morita, U.Mizutani, Y.Yokoyama, R.Note, A.Inoue, H.Ishii, Y.Tezuka and S.Shin, "Inverse photoemission and soft x-ray emission spectra of Al-Ni-Co decagonal single quasicrystal", *J.Electron Spectroscopy and Related Phenomena* **88-91** (1998) 415-418
249. S.Horii, Y.Yamada, H.Ikuta, I.Hirabayashi and U.Mizutani, "Growth and the Transport Property of Single Crystal  $\text{PrBa}_2\text{Cu}_4\text{O}_8$ ", *Proc. of the 11th Int.Symp. on Superconductivity (ISS'98)* (November 16-19, 1998, Fukuoka), pp.89-92
250. U.Mizutani, A.Mase, H.Ikuta, Y.Yanagi, M.Yoshikawa, Y.Itoh and T.Oka, "Synthesis of c-axis oriented single-domain  $\text{Sm}_{123}$  superconductors capable of trapping 9 Tesla at 25 K and its application to a strong magnetic field generator", *Mat.Sci.Eng.* **B65** (1999) 66
251. T.Mizuno, T.Takeuchi and U.Mizutani, "Hybridization effect on electron transport properties of rhombic triacontahedral-type  $\text{Al}_{60-x}\text{Mg}_{40}\text{X}_x$  ( $\text{X}=\text{Zn}, \text{Cu}, \text{Ag}$  and  $\text{Pd}$ ) 1/1-approximants", *Materials Research Society Symposium Proceedings Vol.553*, (edited by J-M.Dubois, P.A.Thiel, A.P.Tsai and K.Urban, 1998 Boston) pp.359-364
252. H.Yamada, T.Takeuchi, U.Mizutani and N.Tanaka, "Structural studies of  $\text{Al}_{55}\text{Si}_7\text{Cu}_{25.5}\text{Fe}_{12.5}$  1/1-approximant by means of X-ray Rietveld method and HAADF-STEM", *Materials Research Society Symposium Proceedings Vol.553*, (edited by J-M.Dubois, P.A.Thiel, A.P.Tsai and K.Urban, 1998 Boston) pp.117-122
253. K.Soda, T.Takeuchi, Y.Yanagida, U.Mizutani, M.Kato, Y.Nishino, A.Sekiyama, S.Imada, S.Suga, T.Matsushita and Y.Saito "Photoemission study of D03-related  $(\text{Fe}_{1-x}\text{V}_x)_3\text{Al}$  alloys", *Jpn.J.Appl.Phys.* **38** (1999) Suppl. 496-499
254. T.Biwa, H.Ikuta and U.Mizutani "Evaluation of the Refrigeration in the Gifford-McMahon-Cycle Refrigerator Based on the Thermoacoustic Theory", *Jpn.J.Appl.Phys.* **38** (1999) 3763-3771
255. S.Horii, U.Mizutani, H.Ikuta, Y.Yamada, J.H.Ye, A.Matsushita, N.E.Hussey, H.Takagi and I.Hirabayashi, "Growth and anisotropic resistivity of  $\text{PrBa}_2\text{Cu}_4\text{O}_8$  and  $\text{Pr}_2\text{Ba}_4\text{Cu}_7\text{O}_{15-y}$  single crystals: A direct probe of metallic Cu-O double chains", *Phys.Rev.B* **61** (2000) 6327-6333

256. M.Kato, Y.Nishino, U.Mizutani and S.Asano, “Electronic, magnetic and transport properties of  $(\text{Fe}_{1-x}\text{V}_x)_3\text{Al}$  alloys”, *J.Phys.:Condens.Matter* **12** (2000) 1769-1779
257. A.Y.Rogatchev, T.Takeuchi and U.Mizutani, “Comparison of the specific heat and the conductivity of amorphous  $\text{Ti}_x\text{Si}_{100-x}$  alloys across the metal-insulator transition”, *Phys.Rev.* **B 61** (2000) 10010-10014
258. U.Mizutani, H.Ikuta, T.Hosokawa, H.Ishihara, K.Tazoe, T.Oka, Y.Itoh, Y.Yanagi and M.Yoshikawa, “Synthesis of c-axis oriented RE-Ba-Cu-O (RE=Sm and Nd) superconductors and performance of superconducting permanent magnets activated by pulsed fields”, *Proc. of the 12th Int.Symp. on Superconductivity (ISS'99)* (October 17-19, 1999, Morioka), pp.431-436
259. Y.Yanagi, Y.Itoh, M.Yoshikawa, T.Oka, T.Hosokawa, H.Ishihara, H.Ikuta and U.Mizutani, “Trapped field distribution on Sm-Ba-Cu-O Bulk superconductor by pulsed-field magnetization”, *Proc. of the 12th Int.Symp. on Superconductivity (ISS'99)* (October 17-19, 1999, Morioka), pp.470-472
260. Y.Yamada, T.Miura, Y.Koike, I.Hirabayashi, H.Ikuta and U.Mizutani, “Influence of carbon and fluorine containing solution on liquid phase epitaxy of  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ ”, *Proc. of the 12th Int.Symp. on Superconductivity (ISS'99)* (October 17-19, 1999, Morioka), pp.601-603
261. T.Miura, Y.Yamada, Y.Koike, H.Ikuta, I.Hirabayashi and U.Mizutani Influence of carbon on single  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  crystalline thick film”, *Proc. of the 12th Int.Symp. on Superconductivity (ISS'99)* (October 17-19, 1999, Morioka), pp.607-609
262. Y.Ichino, K.Matsumoto, Y.Takahashi, S.B.Kim, H.Ikuta, I.Hirabayashi and U.Mizutani, “Preparation of  $\text{NdBa}_2\text{Cu}_3\text{O}_x$  thin films and their superconducting properties in magnetic fields”, *Proc. of the 12th Int.Symp. on Superconductivity (ISS'99)* (October 17-19, 1999, Morioka), pp.879-881
263. A.Rogatchev and U.Mizutani, “Interrelation of specific heat and electron-electron interaction in metallic amorphous Ti-Si alloys close to metal-insulator transition”, *Physica B* **281&282** (2000) 610-612
264. Y.Yokoyama, K.Fukaura, H.Sunada, R.Note, T.Sato, K.Hiraga, A.Inoue and U.Mizutani, “Growth of Icosahedral Single Quasicrystal and 1/1-Cubic Approximant Single Crystal in an Al-Li-Cu Alloy System by the Czochralski Method”, *Mat.Trans., JIM* **41** No.4, (2000) 522-526
265. A.Yu.Rogatchev and U.Mizutani, “Hopping conductivity and specific heat in insulating amorphous  $\text{Ti}_x\text{Si}_{100-x}$  alloys”, *Phys.Rev.* **B61** (2000) 15550-15553
266. U.Mizutani, H.Ikuta, T.Hosokawa, H.Ishihara, K.Tazoe, T.Oka, Y.Itoh, Y.Yanagi and M.Yoshikawa, “Applications of superconducting permanent magnets driven by static and pulsed fields”, *Supercond.Sci.Technol.* **13** (2000) 836-840
267. H.Ikuta, H.Ishihara, T.Hosokawa, Y.Yanagi, Y.Itoh, M.Yoshikawa, T.Oka and U.Mizutani, “Pulse field magnetization of melt-processed Sm-Ba-Cu-O”, *Supercond.Sci.Technol.* **13** (2000) 846-849
268. U.Mizutani, A.Mase, K.Tazoe, H.Ikuta, T.Oka, Y.Itoh, Y.Yanagi and M.Yoshikawa, “Synthesis of c-axis-oriented Sm123 superconductors and their performance as superconducting permanent magnets (invited)”, *Physica C* **335** (2000) 92-96
269. T.Oka, Y.Itoh, Y.Yanagi, M.Yoshikawa, H.Ikuta and U.Mizutani, “Construction of a 2-5 T class superconducting magnetic field generator with use of an Sm123 bulk superconductor and its application to high-magnetic field demanding devices”, *Physica C* **335** (2000) 101-106
270. A.Yu Rogatchev and U.Mizutani Magnetic properties of amorphous  $\text{Ti}_x\text{Si}_{100-x}$  and  $\text{V}_x\text{Si}_{100-x}$  alloys”, *J.Phys.:Condensed Matter* **12** (2000) 4837-4849
271. K.Yamagiwa, H.Hiei, Y.Takahashi, S.B.Kim, K.Matsumoto, H.Ikuta, U.Mizutani and I.Hirabayashi, “Preparation of bi-axially aligned  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  film on  $\text{CeO}_2$ -buffered MgO by chemical solution deposition”, *Physica C* **334** (2000) 301-305
272. N.Sakai, A.Mase, H.Ikuta, S-J.Seo, U.Mizutani and M.Murakami, “Mechanical properties of Sm-Ba-Cu-O/Ag bulk superconductors”, *Supercond.Sci.Technol.* **13** (2000) 770-773
273. H.Okamura, J.Kawahara, T.Nanba, S.Kimura, K.Soda, U.Mizutani, Y.Nishino, M.Kato,



- I.Shimoyama, H.Miura, K.Fukui, K.Nakagawa, H.Nakagawa and T.Kinoshita, “ Pseudogap formation in the intermetallic compounds  $(\text{Fe}_{1-x}\text{V}_x)_3\text{Al}$ ”, *Phys.Rev.Letters* **84** (2000) 3674-3677
274. R.Funahashi, I.Matsubara, H.Ikuta, T.Takeuchi, U.Mizutani and S.Sodeoka, “An Oxide Single Crystal with High Thermoelectric Performance in Air”, *Jpn.J.Appl.Phys.* **39** (2000) L1127-1129
275. M.Kato, Y.Nishino, U.Mizutani, Y.Watanabe and S.Asano, “Temperature dependence of electrical resistivity in  $(\text{Fe}_{1-x}\text{Ti}_x)_3\text{Al}$  alloys”, *J.Phys:Condensed Matter* **12** (2000) 9153-9162
276. M.Okaji, N.Yamada, A.Mase, H.Ikuta and U.Mizutani, “Anomalous thermal expansion behaviors in Sm-Ba-Cu-O superconductors”, *Physica C* **341-348** (2000) 1883-1884
277. U.Mizutani, “Electron transport mechanism in the pseudogap system: quasicrystals, approximants and amorphous alloys (invited)”, *Mat.Sci.Eng.* **294-296** (2000) 464-469
278. T.Takeuchi, H.Yamada, M.Takata, T.Nakata, N.Tanaka and U.Mizutani, “Atomic structure of the Al-Cu-Fe-Si 1/1-cubic approximant”, *Mat.Sci.Eng.* **294-296** (2000) 340-344
279. T.Takeuchi, T.Mizuno, E.Banno and U.Mizutani, “Magic number of electron concentration in the icosahedral cluster of  $\text{Al}_x\text{Mg}_{40}\text{X}_{60-x}$  ( $\text{X}=\text{Zn}, \text{Cu}, \text{Ag}$  and  $\text{Pd}$ ) 1/1-cubic approximants”, *Mat.Sci.Eng.* **294-296** (2000) 522-526
280. E.Belin-Ferré, V.Fourneé, U.Mizutani, T.Takeuchi and H.Müller, “Investigation of Al and Mg occupied densities of states of Al-Mg-Zn alloys”, *Mat.Sci.Eng.* **294-296** (2000) 516-518
281. Z.M.Stadnik, T.Takeuchi and U.Mizutani, “ $^{57}\text{Fe}$  Mossbauer study of icosahedral  $\text{Al}_{55}\text{Si}_7\text{Cu}_{25.5}\text{Fe}_{12.5}$  and its 1/1 approximant”, *Mat.Sci.Eng.* **294-296** (2000) 331-334
282. H.Ikuta, T.Hosokawa, M.Yoshikawa and U.Mizutani, “Synthesis and superconducting properties of c-axis aligned, single-domain NdBCO/Ag melt-processed superconductors”, *Supercond.Sci.Technol.* **13** (2000) 1559-1568
283. K.Takenaka, K.Nakada, A.Osuka, S.Horii, H.Ikuta, I.Hirabayashi, S.Sugai and U.Mizutani, “Anisotropic optical spectra  $\text{PrBa}_2\text{Cu}_4\text{O}_8$ : Possible Tomonaga-Luttinger liquid response of the quasi-one-dimensional metallic CuO double chains”, *Phys.Rev.Letters* **85** (2000) 5428-5431
284. Y.Nishino, H.Kato, M.Kato and U.Mizutani, “Effect of off-stoichiometry on the transport properties of the Heusler-type  $\text{Fe}_2\text{VAl}$  compound”, *Phys.Rev. B* **63** (2001) 233303
285. U.Mizutani, T.Takeuchi, V.Fournee, H.Sato, E.Banno and T.Onogi, “Interplay of atomic and electronic structures in RT- and MI-type 1/1-approximants: why does the Hume-Rothery rule work? (invited)”, *Scripta mater.* **44** (2001) 1181-1185
286. T.Takeuchi, T.Onogi, E.Banno and U.Mizutani, “Direct evidence of the Hume-Rothery stabilization mechanism in Al-Mn-Fe-Si Mackay-Type 1/1-cubic approximants”, *Materials Transactions*, **42** (2001) 933-938
287. R.Funahashi, I.Matsubara, H.Ikuta, T.Takeuchi and U.Mizutani, “Thermoelectric properties of  $(\text{Ca}, \text{Sr}, \text{Bi})_2\text{Co}_2\text{O}_5$  whiskers”, *Materials Transactions*, **42** (2001) 956-960
288. T.Biwa, M.Yui, T.Takeuchi and U.Mizutani, “Metal-insulator transition in the amorphous  $\text{Ce}_x\text{Si}_{100-x}$  ( $4 \leq x \leq 83$ ) heavy fermion system”, *Materials Transactions*, **42** (2001) 939-950
289. H.Sato, T.Takeuchi and U.Mizutani, “Identification of the Brillouin zone planes in the Hume-Rothery matching rule and their role in the formation of the pseudogap from ab initio band calculations for the Al-Mg-Zn 1/1-11/1-1/1 approximant”, *Phys.Rev.B* **64** (2001) 094207
290. U.Mizutani, T.Takeuchi, E.Banno, V.Fourneé, M.Takata and H.Sato, “Determination of Spatially Hybridized Charge Distribution and its Effect on Electron Transport in the Al-Cu-Ru-Si 1/1-Approximant--Theoretical Basis for the Hume-Rothery Rule—”, *Symposium Proceedings of Materials Research Society*, edited by E.Belin-Ferré, P.A.Thiel, A.-P.Tsai and K.Urban, (vol.643, Nov. 27-30, 2000, Boston, U.S.A.) K13.1
291. T.Takeuchi, E.Banno, T.Onogi, T.Mizuno, T.Sato, V.Fourneé and U.Mizutani, “Classification of

Icosahedral Quasicrystals and their Approximants by the Electronic Conduction Mechanisms”, Symposium Proceedings of Materials Research Society, edited by E.Belin-Ferré, P.A.Thiel, A.-P.Tsai and K.Urban, (vol.643, Nov. 27-30, 2000, Boston, U.S.A.) K13.4

292. V.Fourneé, U.Mizutani, T.Takeuchi, K.Saitoh, M.Ikeyama, J.Q.Guo and A.-P.Tsai, “Electron Transport Properties and Thermoelectric Effect of Al-Pd-Mn Single Quasicrystals Doped with M=Au or Re by Ion Implantation and its Comparison with Quaternary Quasicrystalline Samples”, Symposium Proceedings of Materials Research Society, edited by E.Belin-Ferré, P.A.Thiel, A.-P.Tsai and K.Urban, (vol.643, Nov. 27-30, 2000, Boston, U.S.A.) K14.3

293. H.Ikuta, Y.Yanagi, M.Yoshikawa, Y.Itoh, T.Oka and U.Mizutani Melt processing and the performance as a superconducting permanent magnet of RE-Ba-Cu-O/Ag (RE=Sm, Nd)”, *Physica C* **357-360** (2001) 837-842

294. K.Tazoe, H.Ikuta, M.Yoshikawa, Y.Yanagi, Y.Itoh, T.Oka and U.Mizutani, “Improvement of the microstructure of melt-processed Sm-based superconductors”, *Physica C* **357-360** (2001) 807-810

295. H.Ishihara, H.Ikuta, Y.Itoh, Y.Yanagi, M.Yoshikawa, T.Oka and U.Mizutani, “Pulsed field magnetization of melt-processed Sm-Ba-Cu-O”, *Physica C* **357-360** (2001) 763-766

296. U.Mizutani, T.Takeuchi and H.Sato, “Atomic Structure Determination, Electronic Structure Calculations and Interpretation of Electron Transport Properties of Various 1/1-1/1-1/1 Approximants (overview)”, *J.Phys.:Condensed Matter* **14** (2002) R767-R788

297. K.Sato, H.Uchiyama, I.Kanazawa, E.Hamada, T.Suzuki, T.Takeuchi and U.Mizutani, “Positron-trapping property in Al-Mg-Zn alloy system”, *J.Alloys and Compounds*, **342** (2002) 306-309

298. T.Takeuchi, H.Sato and U.Mizutani, “Investigation of the Hume-Rothery stabilization mechanism from ab initio band calculations for different electron compounds: Cu<sub>5</sub>Zn<sub>8</sub> and Al-Mg-Zn and Al-Cu-Ru-Si approximants”, *J.Alloys and Compounds* **342** (2002) 355-359

299. T.Onogi, T.Takeuchi, H.Sato and U.Mizutani, “Atomic and electronic structure determination for a series of Al-Re-Si MI-type 1/1-cubic approximants”, *J.Alloys and Compounds* **342** (2002) 397-401

300. T.Takeuchi and U.Mizutani, “Interpretation of high electrical resistivity behavior based on the structure determination of the Al-Cu-(Fe, Ru)-Si 1/1-cubic approximants”, *J.Alloys and Compounds* **342** (2002) 416-421

301. T.Biwa, Y.Ueda, T.Yazaki and U.Mizutani, “Thermodynamical mode selection rule observed in thermoacoustic oscillations”, *Europhys.Lett.* **60** (3), (2002) 363-368

302. S.Sunahara, T.Biwa and U.Mizutani, “Thermoacoustic heat pumping effect in a Gifford-McMahon refrigerator”, *J.Appl.Phys.* **92** (2002) 6334-6336  
(January 6, 2003)

303. Y.Ueda, T.Biwa, U.Mizutani and T.Yazaki, “Acoustic field in a thermoacoustic Stirling engine having a looped tube and resonator”, *Applied Physics Letters* **81** (2002) 5252-5254

304. U.Mizutani, H.Ikuta, T.Oka, Y.Itoh, Y.Yanagi and M.Yoshikawa, “Synthesis and magnetization of high-Tc bulk superconductors and their application as superconducting permanent magnets”, *International Journal of Applied Electromagnetics and Mechanics*, **14** (2001/2002) 57-63

305. U.Mizutani, T.Matsuda, Y.Yanagi, Y.Itoh, H.Ikuta and T.Oka, “Application of RE123-Bulk Superconductors as a Permanent Magnet in Magnetron Sputtering Film Deposition Apparatus”, “Processing of High-Temperature Superconducting Ceramic Transactions”, vol.140, edited by A.Goyal, W.Wong-Ng, M.Murakami and J.Driscoll, (2003) pp. 273-284

306. H.Matsuzawa, K.Ohishi, K.Ishikawa, T.Morita, M.Yoshikawa, H.Ikuta and U.Mizutani, “Magnetic confinement of weakly ionized plasma with superconducting bulk magnets”, *Appl.Phys.Letters* **82** (2003) 2850-2852

307. B.Latha, M.Yoshikawa, Y.Yanagi, T.Yamada, Y.Itoh, H.Ikuta and U.Mizutani, “Position dependence

- of superconducting properties of large single domain Sm-Ba-Cu-O bulk superconductors prepared under various conditions”, *Physica C* **392-396** (2003) 521-525
308. T.Matsuda, S.Kashimoto, A.Imai, Y.Yanagi, Y.Itoh, H.Ikuta, U.Mizutani, K.Sakurai and H.Hazama, “Application of 60 mm $\phi$  superconducting bulk magnet to magnetron sputtering”, *Physica C* **392-396** (2003) 696-703
309. T.Yamada, H.Ikuta, M.Yoshikawa, Y.Yanagi, Y.Itoh and U.Mizutani, “Field trapping capability of melt-processed (Nd-Eu-Gd)-Ba-Cu-O bulk superconductors”, *Physica C* **392-396** (2003) 623-627
310. T.Iguchi, T.Araki, Y.Yamada, H.Ikuta, I.Hirabayashi, Y.Shiohara and U.Mizutani, “Metal-organic deposition of RE-Ba-Cu-O (RE=Dy, Ho, Er and Tm) films using trifluoroacetates”, *Physica C* **392-396** (2003) 900-904
311. U.Mizutani, H.Hazama, T.Matsuda, Y.Yanagi, Y.Itoh, H.Ikuta, K.Sakurai and A.Imai, “Performance of the magnetron sputtering apparatus equipped with 60 mm $\phi$  superconducting bulk magnet”, *Supercond.Sci.Technol.* **16** (2003) 1207-1211
312. T.Oka, K.Yoshikawa, Y.Itoh, Y.Yanagi, M.Yoshikawa, H.Ikuta, U.Mizutani, H.Okada, K.Noto, “A 3T magnetic field generator using melt-processed bulk superconductors as trapped field magnets and its applications”, *Physica C* **392-396** (2003) 709-712
313. Z.M.Stadnik, T.Takeuchi, N.Tanaka and U.Mizutani, “Structural, Mössbauer and transport studies of the icosahedral quasicrystals  $Al_{55}Si_7Cu_{25.5}Fe_{12.5}$ ,  $Al_{62.5}Cu_{24.5}Fe_{13}$  and the crystalline 1/1 approximant  $Al_{55}Si_7Cu_{25.5}Fe_{12.5}$ ”, *J.Phys.:Condens.Matter* **15** (2003) 6365-6380
314. T.Takeuchi, T.Onogi, T.Otagiri, U.Mizutani, H.Sato, K.Kato, T.Kamiyama, “Contribution of local atomic arrangements and electronic structure to high electrical resistivity in the  $Al_{82.6-x}Re_{17.4}Si_x$  ( $7 \leq x \leq 12$ ) 1/1-1/1-1/1 approximants”, *Phys.Rev.***B68** (2003) 184203
315. U.Mizutani, T.Takeuchi and H.Sato, “Interpretation of the Hume-Rothery rule in quasicrystals and their approximants”, *J.Non-Cryst.Solids*, **334&335** (2004) 331-335
316. T.Takeuchi, N.Koshikawa, E.Abe, K.Kato and U.Mizutani, “Structure of the  $Al_{65}Rh_{27}Si_8$  2/1-2/1-2/1 approximant”, *J.Non-Cryst.Solids*, **334&335** (2004) 161-166
317. H.Takahashi, T.Takeuchi, U.Mizutani, J.Q.Guo and A.P.Tsai, “Phase stability of Cd-Y-Yb quasicrystal and 1/1-1/1-1/1 approximant”, *J.Non-Cryst.Solids*, **334&335** (2004) 228-233
318. H.Hazama, A.Imai, T.Matsuda, U.Mizutani, H.Ikuta, Y.Yanagi, Y.Itoh, K.Sakurai, A.Sekiguchi and T.Yamazaki, “Low Pressure Magnetron Sputtering by Using Extremely Strong Magnetic Fields and Coverage Properties of Copper Films Grown as Advanced Seed Layer”, *Conference Proceedings AMC XIX* (2004, Materials Research Society), pp.681-686
319. T.Takeuchi, T.Kondo, T.Takami, H.Takahashi, H.Ikuta, U.Mizutani, K.Soda, R.Funahashi, M.Shikano, M.Mikami, S.Tsuda, T.Yokoya and S.Shin, “Contribution of electronic structure to the large thermoelectric power in layered cobalt oxides”, *Phys.Rev.B* **69** (2004) 125410
320. B.Latha, H.Ikuta and U.Mizutani, “Effects of Zn Doping on the Superconducting Properties of the Melt Textured Dy-Ba-Cu-O Bulk Superconductors”, *Japanese Journal of Applied Physics*, **43**, No.3, (2004) 970-975
321. U.Mizutani, T.Takeuchi and H.Sato, “Interpretation of the Hume-Rothery Rule in Complex Electron Compounds:  $\gamma$ -phase  $Cu_5Zn_8$  Compound, FK-Type  $Al_{30}Mg_{40}Zn_{30}$  and MI-Type  $Al_{68}Cu_7Ru_{17}Si_8$  1/1-1/1-1/1 Approximants”, *Prog.Mat.Sci.* **49/3-4** (2004) 227-261
322. Y. Ichino, Y. Yoshida, Y. Takai, K. Matsumoto, H. Ikuta and U. Mizutani, “ Influences of oxygen pressure and substrate temperature on the quality of  $NdBa_2Cu_3O_x$  thin films prepared by pulsed laser deposition”, *Supercond. Sci. Technol.* **17** (2004) 775-780
323. Y.Ueda, T.Biwa, U.Mizutani and T.Yazaki, “Experimental studies of a thermoacoustic Stirling prime mover and its application to a cooler”, *J.Acoust.Soc.Am.*, **115** (2004) 1134

324. T.Biwa, Y.Tashiro, U.Mizutani, M.Kozuka and T.Yazaki, “Experimental demonstration of thermoacoustic energy conversion in a resonator”, *Phys.Rev.E* **69** (2004) 066304
325. U.Mizutani, H.Hazama, T.Matsuda, Y.Yanagi, Y.Itoh, H.Ikuta, A.Imai, A.Sekiguchi and K.Sakurai, “Application of 60mm-diameter Superconducting Bulk Magnet to Magnetron Sputtering”, *Trans.MRS Japan* **29** (2004) 1293
326. H.Hazama, T.Matsuda, U.Mizutani, H.Ikuta, Y.Yanagi, Y.Itoh, K.Sakurai, A.Sekiguchi and A.Imai, “Bottom Coverage of Cu Deposit for 200-nm-Class Circular Vias with High Aspect Ratios Investigated by Magnetron Sputtering Activated Using Superconducting Bulk Magnet”, *Japan.J. of Appl. Phys.*, **43** No.9A, (2004) 6026
327. T.Takeuchi, T.Otagiri, H.Sakagami, T.Kondo, U.Mizutani, H.Sato, “Thermoelectric properties of  $\text{Al}_{82.6-x}\text{Re}_{17.4}\text{Si}_x$  ( $7 \leq x \leq 12$ ) 1/1-cubic approximants”, *Phys.Rev. B* **70** (2004) 144202
328. H.Sato, T.Takeuchi and U.Mizutani, “Orbital hybridizations versus the Fermi surface-Brillouin zone interaction in strongly hybridizing Al-Li-Cu 1/1-1/1-1/1 approximant”, *Phys.Rev.B* **70** (2004) 024210
329. B.Latha, H.Ikuta and U.Mizutani, “Enhancement of critical currents and trapped fields of melt textured ZnO doped Dy-Ba-Cu-O bulk superconductors”, *Physica C* **412-414** (2004) 566-570
330. Y.Yanagi, M.Yoshikawa, Y.Itoh, T.Oka, H.Ikuta and U.Mizutani, “Generation of extremely strong magnetic fields in open space by using metal-ring-reinforced 60 mm $\Phi$  Sm-Ba-Cu-O superconducting magnet”, *Physica C* **412-414** (2004) 744-749
331. T.Iwasaki, H.Ikuta, M.Yoshikawa, Y.Yanagi, Y.Itoh and U.Mizutani, “Annealing melt-processed Sm-Ba-Cu-O bulk superconductors under 10 atm oxygen”, *Physica C* **412-414** (2004) 580-585
332. A.Takagi, T.Miyamoto, H.Ikuta and U.Mizutani, “Preparation of melt-textured  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  bulk with  $\text{CeO}_2$  additions and their superconducting properties”, *Physica C* **412-414** (2004) 586-591
333. U.Mizutani, H.Hazama, T.Matsuda, Y.Yanagi, Y.Itoh, H.Ikuta, K.Sakurai and A.Imai, “Magnetron sputtering activated by a 60 mm diameter superconducting bulk magnet”, *Supercond.Sci.Technol.* **18** (2005) S30-S33
334. Y.Yanagi, Y.Itoh, M.Yoshikawa, T.Oka, H.Ikuta and U.Mizutani, “Pulsed Field Magnetization of a 36 mm Diameter Single-Domain Sm-Ba-Cu-O Bulk Superconductor at 30, 35 and 77 K”, *Supercond.Sci.Technol.* **18** (2005) 839-849
335. Y.Nishino, H.Sumii and U.Mizutani, “Transport and magnetic properties of the Heusler-type  $\text{Fe}_{2-x}\text{V}_{1+x}\text{Al}$  system ( $-0.01 \leq x \leq 0.08$ )”, *Phys.Rev. B* **71** (2005) 094425
336. R.Asahi, H.Sato, T.Takeuchi and U.Mizutani, “Verification of Hume-Rothery Electron Concentration Rule in  $\text{Cu}_5\text{Zn}_8$  and  $\text{Cu}_9\text{Al}_4$   $\gamma$  brasses by *ab initio* FLAPW band calculations”, *Phys.Rev. B* **71** (2005) 165103
336. K.Soda, K.Shimba, S.Yagi, M.Kato, T.Takeuchi, U.Mizutani, T.Zhang, M.Hasegawa, A.Inoue, T.Ito and S.Kimura, “Electronic Structure of bulk metallic glass  $\text{Zr}_{55}\text{Al}_{10}\text{Cu}_{30}\text{Ni}_5$ ”, *J.Electron Spectroscopy and Related Phenomena*, **144-147** (2005) 585-587
337. K.Soda, H.Murayama, K.Shimba, S.Yagi, J.Yuhara, T.Takeuchi, U.Mizutani, H.Sumii, M.Kato, H.Kato, Y.Nishino, A.Sekiyama, S.Suga, T.Matsushita and Y.Saitoh, “High-Resolution soft x-ray photoelectron study of density of states and thermoelectric properties of the Heusler-type alloys  $(\text{Fe}_{2/3}\text{V}_{1/3})_{100-y}\text{Al}_y$ ”, *Phys.Rev. B* **71** 245112 (2005)
338. R.Asahi, H.Sato, T.Takeuchi and U.Mizutani, “Interpretation of the Hume-Rothery electron concentration rule in the  $\text{T}_2\text{Zn}_{11}$  (T=Ni, Pd, Co and Fe)  $\gamma$  brasses based on first-principles FLAPW calculations”, *Phys.Rev. B* **72** (2005) 125102
339. U.Mizutani, “The Hume-Rothery rule in structurally complex alloy phases”, *The Science of Complex Alloy Phases* Edited by T.B.Massalski and P.E.A.Turchi, TMS (The Minerals, Metals & Materials Society), 2005, pp.1-42

340. U.Mizutani, R.Asahi, H.Sato and T.Takeuchi, "The Hume-Rothery electron concentration rule for a series of gamma-brasses studied by full-potential linearized augmented plane wave (FLAPW) band calculations", *Phil.Mag.* 86 (2006) 645-654
341. M.Hasegawa, T.Taketomi, H.Kato, T.Takeuchi, U.Mizutani and A.Inoue, "Comparative study on glassy phase stabilities of Zr-Co-Al and Zr-Ni-Al metallic glasses", *Mat.Trans.*, 46, No.12, (2005) 2785-2790
342. H.Hazama, U.Mizutani and R.Asahi, "First-principles calculations of Ag-Sb nanodot formation in thermoelectric  $\text{AgPb}_m\text{SbTe}_{2+m}$  ( $m=6, 14, 30$ )", *Phys.Rev.B* 73 (2006) 115108
343. T.Takeuchi, N.Nagasako, R.Asahi and U.Mizutani, "Extremely small thermal conductivity of the Al-based Mackay-type 1/1-cubic approximants", *Phys.Rev.B* 74 (2006) 054206
344. Y.Nishino, S.Deguchi and U.Mizutani, "Thermal and transport properties of the Heusler-type  $\text{Fe}_2\text{VA}_{1-x}\text{Ge}_x$  ( $0 \leq x \leq 0.20$ ) alloys: Effect of doping on lattice thermal conductivity, electrical resistivity and Seebeck coefficient", *Phys.Rev.B* 74 (2006) 115115
345. M.Hasegawa, T.Takeuchi, K.Soda, H.Sato and U.Mizutani, "Electronic Structure and Phase Stability of Glassy Alloys", *Mat.Sci.Forum* 539-543 (2007) pp.2048-2053
346. U.Mizutani, R.Asahi, H.Sato and T.Takeuchi, "Mediated resonance effect of the vanadium 3d states on phase stability in the  $\text{Al}_8\text{V}_5$   $\gamma$ -brass studied by first-principles FLAPW and LMTO-ASA electronic structure calculations", *Phys.Rev.B* 74 (2006) 235119
347. T.Noritake, M.Aoki, S.Towata, T.Takeuchi and U.Mizutani, "Structure determination of structurally complex  $\text{Ag}_{36}\text{Li}_{64}$  gamma-brass", *Acta Cryst.*B63 (2007) 726-734
348. T.Yamaguchi, H.Ikuta, T.Tomofuji, Y.Yanagi, Y.Itoh, T.Oka and U.Mizutani, "Development of a magnetron sputtering apparatus equipped with superconducting bulk magnets for the preparation of optical multilayer films", *Physica C* 463-465 (2007) 1342-1345
349. U.Mizutani, R.Asahi, H.Sato, T.Noritake and T.Takeuchi, "Failure of the Hume-Rothery stabilization mechanism in the  $\text{Ag}_5\text{Li}_8$  gamma-brass studied by first-principles FLAPW electronic structure calculations", *J.Phys.: Condens. Matter* 20 (2008) 275228
350. U.Mizutani, "Electron transport properties of complex metallic alloys ": Book Series on Complex Metallic Alloys- Vol.1 "Basics of Thermodynamics and Phase Transition in Complex Intermetallics", Edited by Esther Belin-Ferré, World Scientific, Singapore, 2008, pp 319-366
351. U.Mizutani, T.Yamaguchi, H.Ikuta, T.Tomofuji, Y.Yanagi, Y.Itoh and T.Oka, "Construction of superconducting bulk magnet magnetron sputtering apparatus for fabrication of highly reflective optical mirrors", *Materials Science and Engineering B* 151 (2008) 84–89
352. U.Mizutani, T.Yamaguchi, H.Ikuta, T.Tomofuji, Y.Yanagi, Y.Itoh and T.Oka, "Fabrication of Mo/Si multilayer mirrors for extreme ultraviolet lithography by means of superconducting bulk magnet magnetron sputtering", *Physica C* 468 (2008) 1456-1460
353. T.Yamaguchi, H.Ikuta, T.Tomofuji, Y.Yanagi, Y.Itoh, T.Oka and U.Mizutani, "Reflective properties of Mo/Si multilayer for EUV lithography deposited by the magnetron sputtering device with superconducting bulk magnets", *Physica C* 468 (2008) 2170–2173.
354. U.Mizutani, R.Asahi, T.Takeuchi, H.Sato, O.Y.Kontsevoi and A.J. Freeman, "e/a determination for the transition metal element TM in Al—Cu—TM—Si (TM= Fe and Ru) approximants and B2-compounds by means of the FLAPW-Fourier method", *Z. Kristallogr.* 224 (2009) 17–20 / DOI 10.1524/zkri.2009.1078
355. U.Mizutani, T.Yamaguchi, T.Tomofuji, Y.Yanagi, Y.Itoh, K.Saitoh, N.Tanaka, N.Matsunami and H.Ikuta, "Factors Affecting Extreme Ultraviolet Reflectivity of Mo/Si Multilayer Films Synthesized by Superconducting Magnetron Sputtering", *Japan.J.Appl.Phys.*, 48 (2009) 025507

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