

REFERENCES

- [1] Moulson, A. J., and Herbert, J. M. (2003). *Electroceramics: Materials, Properties and Applications*, 2nd ed. Chichester: John Wiley & Sons Ltd.
- [2] Cross L. E. (1996). *Ferroelectric Ceramics: Materials and Applications Issues; in Ceramic Transactions*. Edited by K. M. Nair and V. N. Shukla. Amercian Ceramic Society, Ohio: Westerville.
- [3] Nalwa, H. S. (2000). *Handbook of Nanostructured Materials and Nanotechnology*, Vol. 5. New York: Academic Press.
- [4] S. Ananta and N. W. Thomas, *J. Eur. Ceram. Soc.*, 1999, **19**: 2917.
- [5] J. P. Guha, *J. Eur. Ceram. Soc.*, 2003, **23**: 133.
- [6] J. D. Kuntz, G. D. Zhan, A. K. and Mukherjee, *MRS Bull.*, 2004, **29**: 22.
- [7] Hwang, H. J., Ueda, S. and Niihara, K. (1994). *Grain Boundary Controlled Mechanical and Dielectric Properties of BaTiO₃-Based Nanocomposite*, Vol. 44. Ohio: Westerville.
- [8] Line, M. E. and Glass, A. M. (1977) *Principle and Applications for Ferroelectrics and Related Materials*. Oxford: Clarendon Press.
- [9] Muller, O. and Roy, R. (1974). *The Major Ternary Structural Families*. New York: Springer-Verlag.
- [10] A.S. Bhalla, R. Guo and R. Roy, *Mat. Res. Innovat.*, 2000, **4**: 3.
- [11] I.- W. Chen, *J. Phys. Chem. Solids*, 2000, **61**(2): 197.
- [12] G. H. Haerting, *J. Am. Ceram. Soc.*, 1999, **82**: 797.

- [13] Uchino, K. (1997). *Piezoelectric Actuators and Ultrasonic Motors*. Boston: Kluwer Academic.
- [14] G. A. Smolenskii and A. I. Agranovskaya, *Sov. Phys.-Solid State (Eng. Transl.)*, 1960, **1**: 1429.
- [15] Jaffe, B., Cook, W. R. and Jaffe, H. (1997). *Piezoelectric Ceramics*. New York: Academic Press.
- [16] G. A. Smolenskii and A. I. Agranovskaya, *Sov. Phy . tech. Phys.*, 1958, **3**: 1380.
- [17] A. Mergen and W. E. Lee, *J. Eur. Ceram. Soc.*, 1997, **17**: 1033.
- [18] B. P. Burton and E. Cockayne, *Phy. Rev. B*, 1999, **60**(18): 12542.
- [19] B. K. Kim, *Mat. Sci. Eng. B-Solid.*, 2002, **94**: 102.
- [20] V. S. Vikhnin, R. Blinc, R. Pirc, S. E. Kapphan, I. L. Kuslova, and P. A. Markovin, *Ferroelectrics*, 2002, **268**: 257.
- [21] N. W. Thomas, S. A. Ivanov, S. Ananta, R. Tellgren, and H. Rundlof, *J. Eur. Ceram. Soc.*, 1999, **19**: 2667.
- [22] J. Chen, M. P. Harmer and D. M. Smyth, *J. Appl. Phys.*, 1994, **76**: 5394.
- [23] L. A. Bursill, H. Qian, J.-L. Peng and X. D. Fan, *Physica. B*, 1995, **216**: 1.
- [24] R. Blinc, J. Dolinsek, A. Gregorovic, B. Zalar, C. Filipic, Z. Kutnjak, A. Levstik and R. Pirc, *Phys. Rev. Lett.*, 1999, **83**(2): 424.
- [25] M. Inada, *Jpn. Natl. Tech. Rept.*, 1977, **27**: 95.
- [26] P. Lucas and W. T. Petuskey, *J. Am. Ceram. Soc.*, 2001, **84**(9): 2150.
- [27] M. Lejeune and J. P. Boilot, *Mater. Res. Bull.*, 1985, **20**(5): 493.
- [28] S. L. Swartz and T. R. Shrout, *Mater. Res. Bull.*, 1982, **17**: 1245.

- [29] A. L. Costa, C. Galassi, G. Fabbri, E. Roncari and C. Capianni, *J. Eur. Ceram. Soc.*, 2001, **21**: 1165.
- [30] E. R. Camargo, M. Kakihana, E. Longo and E. R. Leite, *J. Alloy. Compd.*, 2001, **314**: 140.
- [31] E. R. Camargo, E. Longo and E. R. Leite, *J. Sol-Gel. Sci. Techn.*, 2000, **17**: 111.
- [32] M. Lejeune and J. P. Boilot, *Ceram. Int.*, 1983, **9**(4): 119.
- [33] C.-H. Lu and H.-S. Yang, *Mater. Sci. Eng. B-Solid*, 2001, **84**: 159.
- [34] D. Saha, A. Sen and H. S. Maiti, *Ceram. Int.*, 1999, **25**: 145.
- [35] S. L. Swartz, T. R. Shrout, W. A. Schulze and L. E. Cross, *J. Am. Ceram. Soc.*, 1984, **67**(5): 311.
- [36] W.-F. A. Su, *Mater. Chem. Phys.*, 2000, **62**: 18.
- [37] D. M. Wan, J. Wang, S. C. Ng, and L. M. Gan, *J. Alloy. Compd.*, 1998, **274**: 110.
- [38] P.A. Joy and K. Sreedhar, *J. Am. Ceram. Soc.*, 1997, **80**(3): 770.
- [39] C.H. Lu and H.S. Yang, *Mater. Sci. Eng. B*, 2001, **84**: 159.
- [40] S. Ananta and N. W. Thomas, *J. Eur. Ceram. Soc.*, 1999, **19**(2): 155.
- [41] H. C. Wang and W. A. Schulze, *J. Am. Ceram. Soc.*, 1990, **73**: 825.
- [42] M. M. A. Sekar, A. Halliyal and K. C. Patil, *J. Mater. Res.*, 1996, **11**: 1210.
- [43] M. Lejeune and J. P. Boilot, *Ceram. Inter.*, 1982, **8**: 99.
- [44] J. Chen, A. Gorton, H. M. Chan and M. P. Harmer, *J. Am. Ceram. Soc.*, 1986, **69**: 303.
- [45] M. Lejeune and J. P. Boilot, *Am. Ceram. Soc. Bull.*, 1985, **64**: 679.
- [46] C. G. S. Pillai, and P. V. Ravindran, *Thermochimica Acta.*, 1996, **278**: 109.

- [47] D. Bersani, P. P. Lotlici, A. Montenero, S. Pigoni and G. Gnappi, *J. Non-Crys. Solids.*, 1995, **192&193**: 490.
- [48] J. Fang, J. Wang, L. M. Gan and S. C. Ng, *Mater. Lett.*, 2002, **52**: 304.
- [49] M. C. Gelabert, B. L. Gersten and R. E. Riman, *J. Crys. Growth.*, 2000, **211**: 497.
- [50] G. Shirane and S. Hoshino, *J. Phys. Soc. Jpn.*, 1951, **6**: 265.
- [51] J. Tartaj, J. F. Fernandez and M. E. Villafuerte-Castrejon, *Mater. Res. Bull.*, 2001, **36**: 479.
- [52] K. Okazaki, *Ferroelectrics*, 1982, **41**: 77.
- [53] R. Tickoo, R. P. Tandon, N. C. Mehra and P. N. Kotru, *Mater. Sci. Eng.*, 2002, **B00**: 1.
- [54] M. L. Calzada and J. Frutos, *Mater. Res. Bull.*, 1993, **28**: 967.
- [55] C. Urlacher, O. Marty, J. C. Plenet, J. Serughetti and J. Mugnier, *Thin Solid Film*, 1999, **349**: 61.
- [56] P. Lobmann, W. Glaubitt and J. Fricke, *J. Am. Ceram. Soc.*, 1997, **80**: 2658.
- [57] S. R. Dhage, Y. B. Kholam, H. S. Potdar, S. B. Deshpande, B. D. Sarwade and S. K. Date, *Mater. Lett.*, 2002, **56**: 564.
- [58] G. R. Fox, J. H. Adair and R. E. Newnham, *J. Mater. Sci.*, 1991, **26**: 1187.
- [59] Greninger, D., Kollnitsch, V., Kline, C. H., Willemsens, L. C. and Cole, J. F. (1974). "Lead Titanate"; pp. 90-94 in *Lead Chemicals*, Edited by International Lead Zinc Research Organization, Inc. (ILZRO), New York.
- [60] J. G. Back, T. Isobe and M. Senna, *J. Am. Ceram. Soc.*, 1997, **80**: 973.
- [61] O. Abe and Y. Suzuki, *Mater. Sci. Forum*, 1996, **225**: 563.
- [62] J. Xue, D. Wan and J. Wang, *Mater. Lett.*, 1999, **39**: 364.

- [63] A. Rujiwatra, N. Thammajak, T. Sarakonsri, R. Wongmaneerung and S. Ananta, *J. Crys. Growth*, 2006, **289**: 224.
- [64] A. Udomporn and S. Ananta, *Mater. Lett.*, 2004, **58**: 1154.
- [65] G. Shirane, R. Pepinski and B. C. Frazer, *Acta Crystallogr.*, 1956, **9**: 131.
- [66] H. Takeuchi, S. Jyomura, E. Yamamoto, and Y. Ito, *J. Acoust. Soc. Am.*, 1982, **72**: 1114.
- [67] S. Ikegami, I. Ueda and T. Nagata, *J. Acoust. Soc. Am.*, 1971, **50**: 1060.
- [68] T. Sawannasiri and A. Safari, *J. Am. Ceram. Soc.*, 1993, **76**: 3155.
- [69] N. Ichinose and Y. Fuse, *Ferroelectrics*, 1990, **106**: 369.
- [70] Amarande, L., Tanasoiu, C., Miclea C. and Micka, C. F. 2000. "Influence of Bi and Y Additions on Electromechanical Anisotropy of Lead Titanate Ceramics", In *Piezoelectric Materials: Advances in Science, Technology and Applications NATO Science Series-3. High Technology*, 76, 59-66, Kluwer Academic Publisher.
- [71] K. M. Rittenmyer and R. Y. Ting, *Ferroelectrics*, 1990, **110**: 171.
- [72] L. M. Sheppard, *Am. Ceram. Soc. Bull.*, 1992, **71**: 85.
- [73] P. Duran, J. F. F. Lazona, F. Capel and C. Moure, *J. Mater. Sci.*, 1988, **23**: 4463.
- [74] I. Ueda, *Jpn. J. Appl. Phys.*, 1972, **11**: 450.
- [75] Y. Matsuo and H. Sasaki, *J. Am. Ceram. Soc.*, 1966, **49**: 229.
- [76] S. Kim, M. Jun and S. Hwang, *J. Am. Ceram. Soc.*, 1999, **82**: 289.
- [77] L. B. Kong, W. Zhu and O. K. Tan, *J. Mater. Sci. Lett.*, 2000, **19**: 1963.
- [78] K. Ishikawa, K. Yoshikawa and N. Okada, *Phys. Rev.*, 1988, **37**(10): 5852.

- [79] T. Takeuchi, M. Tabuchi, K. Kondoh, N. Tamari and H. Kageyama, *J. Am. Ceram. Soc.*, 2000, **83**: 541.
- [80] P. M. Vilarinho, L. Zhou, M. Pockl, N. Marques and L. Baptista, *J. Am. Ceram. Soc.*, 2000, **83**: 1149.
- [81] A. Udomporn, K. Pengpat and S. Ananta, *J. Eur. Ceram. Soc.*, 2004, **24**: 185.
- [82] J. Zhoo, Q. M. Zhang, N. Kim and T. Shrout, *Jpn. J. Appl. Phys.*, 1995, **34**: 5658.
- [83] V. Koval, C. Alemany, J. Briancin and H. Brunckove, *J. Electroceramics*, 2003, **10**: 19.
- [84] E. F. Alberta and A. S. Bhalla, *Mater. Lett.*, 1999, **40**: 114.
- [85] Harmer, M. P. and Smyth, D. M. 1992. "Nanostructure, Defect Chemistry, and Properties of Relaxor Ferroelectrics," ONR Final Rept. No. N0014-82-k-0190, Lehigh University, Bethlehem.
- [86] Z. Xu, S. M. Gupta and D. Viehland, *J. Am. Ceram. Soc.*, 2000, **83**(1): 181.
- [87] A. Levstik, Z. Kutnjak, C. Filipic and R. Pirc, *Phys. Rev.*, 1998, **57**(18): 11204.
- [88] S. W. Choi, J. M. Jang and A. S. Bhalla, *Ferroelectrics*, 1996, **189**: 27.
- [89] S. W. Choi, T. R. Shrout, S. J. Jang and A. S. Bhalla, *Ferroelectrics*, 1989, **100**: 29.
- [90] J. G. Back, T. Isobe and M. Senna, *J. Am. Ceram. Soc.*, 1997, **80**: 973.
- [91] K. R. Han, S. Kim and H. J. Koo, *J. Am. Ceram. Soc.*, 1998, **81**: 2998.
- [92] H. Takeuchi, H. Mazusawa and C. Nakaya, in Proc. 1990 IEEE Ultrason. Symp., 1993, **1**: 697.

- [93] J. Chen, A. Shurland, J. Perry, B. Ossmann and T. R. Gururaja, in Proc. 10th IEEE Int. Symp. Appl. Ferroelec., 1996, p.27.
- [94] Taylor, D. J. "Electric and Elastic Coefficients of Lead Magnesium Niobate-based Ceramics under D. C. Bias for Active Smart Sensor Applications," Ph. D. Thesis, The Pennsylvania State University, 1992.
- [95] S. M. Gupta and D. Viehland, *J. Am. Ceram. Soc.*, 1997, **80**: 477.
- [96] J. Kelly, M. Leonard, C. Tantigate and A. Safari, *J. Am. Ceram. Soc.*, 1997, **80**: 957.
- [97] L. F. Brown, R. L. Carlson, J. M. Sempstrott, G. T. Standford and J. J. Fitzgerald, in Proc. 1997 IEEE Ultason. Symp., 1997, p.561.
- [98] D. Viehland, M. C. Kim, J. F. Li and Z. Xu, *Appl. Phys. Lett.*, 1995, **67**: 2471.
- [99] J. Chen, H. M. Chan and M. P. Harmer, *J. Am. Ceram. Soc.*, 1989, **72**: 593.
- [100] C. A. Landall, D. J. Barber, R. W. Whatmore and P. Groves, *J. Mater. Sci.*, 1986, **21**: 4456.
- [101] N. de Mathan, E. Husson, P. Gaucher and A. Morell, *Mater. Res. Bull.*, 1990, **25**: 427.
- [102] J. Chen and M. P. Harmer, *J. Am. Ceram. Soc.*, 1990, **73**: 68.
- [103] U. Syamaprasad, A. R. Sheeja Nair, M. S. Sharma, P. Guruswamy, P. S. Mukherjee, A. D. Damadaran, L. Krishnamurty and M. Achuthan, *J. Mater. Sci.*, 1997, **8**: 199.
- [104] K. Kusumoto and T. Sekiya, *Mat. Res. Bull.*, 1998, **33**: 1367.
- [105] K. R. Han, S. Kim and H. J. Koo, *J. Am. Ceram. Soc.*, 1998, **81**: 2998.
- [106] A. B. Panda and P. Pramanik, *Mater. Lett.*, 2002, **56**: 435.
- [107] J. P. Guha and H. U. Anderson, *J. Am. Ceram. Soc.*, 1986, **69**: C-287.

- [108] F. Chaput, J. P. Boilot, M. Lejuene, R. Papiernik and L. G. Hubert-Pfalzgraf, *J. Am. Ceram. Soc.*, 1989, **72**: 1355.
- [109] D. S. Paik and S. Komarneni, *J. Mater. Sci.*, 1999, **34**: 2313.
- [110] Y. Narendra and G. L. Messing, *J. Am. Ceram. Soc.*, 1997, **80**: 915.
- [111] M. M. A. Sekar, A. Halliyal and K. C. Patil, *J. Mater. Res.*, 1996, **11**: 1210.
- [112] L. B. Kong, J. Ma, W. Zhu and O. K. Tan, *Mat. Res. Bull.*, 2002, **37**: 459.
- [113] J. P. Guha, D. J. Hong and H. U. Anderson, *J. Am. Ceram. Soc.*, 1988, **71**: C-152.
- [114] M. Koyuneu and S. M. Pilgrim, *J. Am. Ceram. Soc.*, 1999, **82**: 3075.
- [115] S. M. Gupta and A. R. Kulkarni, *J. Mater. Res.*, 1995, **10**: 953.
- [116] M. Villegas, A. C. Caballero, M. Kosec, C. Moure, P. Duran and J. F. Fernandez, *J. Mater. Res.*, 1999, **14**: 891.
- [117] M. F. Yan, H. C. Ling and W. W. Rhodes, *J. Mater. Res.*, 1989, **4**: 930.
- [118] D. Saha, A. Sen and H. S. Maiti, *Ceram. Int.*, 1999, **25**: 145.
- [119] M. J. Mayo, D. C. Hague and D.-J. Chen, *Mater. Sci. Eng. A*, 1993, **166**: 145.
- [120] Y. Fang, D. K. Agrawal, D. M. Roy and R. Roy, *Mater. Lett.*, 1995, **23**: 147.
- [121] J. Lu, K. Ueda, H. Yagi, T. Yanagitani, Y. Akiyama and A. A. Kaminskii, *J. Alloys Compd.*, 2002, **341**: 220.
- [122] K. Niihara, *J. Ceram. Soc. Jpn.*, 1991, **99**: 974.
- [123] J. D. Kuntz, G. D. Zhan and A. K. Mukherjee, *MRS Bull.*, 2004, **29**: 22.
- [124] T. Sekino, T. Nakajima, S. Ueda and K. Niihara, *J. Am. Ceram. Soc.*, 1997, **80**: 1139.
- [125] Y. Ji and J. A. Yeomans, *J. Eur. Ceram. Soc.*, 2002, **22**: 1927.
- [126] S. T. Oh, T. Sekino and K. Niihara, *J. Eur. Ceram. Soc.*, 1998, **18**: 31.

- [127] T. Sekino and K. Niihara, *NanoStruct. Mater.*, 1997, **6**: 663.
- [128] Panteny, S. R., Bowen, C. R. and Stevens, R. (2000). *Piezoelectric Particulate Reinforced Nanocomposites*. Oxford: The Alden Group.
- [129] K. Tajima, H. J. Hwang, M. Sando and K. Niihara, *J. Am. Ceram. Soc.*, 2000, **83**: 651.
- [130] H. Hwang and K. Niihara, *J. Mat. Sci.*, 1998, **33**: 549.
- [131] H. J. Hwang, T. Nagai, M. Sando, M. Toriyama and K. Niihara, *J. Eur. Ceram. Soc.*, 1999, **19**: 993.
- [132] H. J. Hwang, M. Sando, M. Toriyama and K. Niihara, IEEE 10th Int'l Sym. Application of Ferroelectrics. 1996, p.373.
- [133] H. J. Hwang, K. Tajima, M. Sando and M. Toriyama, *J. Am. Ceram. Soc.*, 1998, **81**: 3325.
- [134] K. Tajima, H. J. Hwang, M. Sando and K. Niihara, *J. Eur. Ceram. Soc.*, 1999, **19**: 1179.
- [135] Chaisan, W. "Preparation and Characterization of Ceramic Nanocomposites in the PZT-BT and $\text{TiO}_2\text{-SnO}_2$ Systems," Ph.D. Thesis, Chiang Mai University, 2006.
- [136] Y.- C. Liou, *Mater. Lett.*, 2004, **58**: 944.
- [137] A. S. Bhalla, R. Guo and L. E. Cross, *Phys. Rev. B*, 1987, **36**: 2030.
- [138] Klug, H. and Alexander, L. (1974). *X-Ray Diffraction Procedures for Polycrystalline and Amorphous Materials*, 2nd ed. New York: John Wiley & Sons Ltd.
- [139] *Annual Book of ASTM Standards*, Philadelphia, American Society for Testing and Materials, 1999.

- [140] O. Heiri, A. F. Lotten and G. Lemcke, *J. Paleolimnology*, 2001, **25**: 101.
- [141] Lee, W. E. and Rainforth, W. M. (1994). *Ceramic Microstructures Property Control By Processing*. London: Chapman & Hall.
- [142] S. Ananta, *Mater. Lett.*, 2004, **58**: 2530.
- [143] E. Goo, T. Yamamoto and K. Okazaki, *J. Am. Ceram. Soc.*, 1986, **69**: C-188.
- [144] Reeds, J. S. (1995). *Principles of Ceramics Processing*, 2nd ed. New York: Wiley.
- [145] Richerson, D. (2005). *Modern Ceramic Engineering*, 3rd ed.. New York: CRC Press.
- [146] Y. C. You, H. L. Park, Y. G. Song, H. S. Moon and G. C. Kim, *J. Mater. Sci Lett.*, 1994, **13**: 1487.
- [147] D. H. Kang and K.H. Yoon, *Ferroelectrics*, 1988, **87**: 255.
- [148] K. Sreedhar and N.R. Pavaskar, *Mater. Lett.*, 2002, **53**: 452.
- [149] Powder Diffraction File No. 71-1176, International Centre for Diffraction Data, Newton Square, PA, 2000.
- [150] Powder Diffraction File No. 28-317, International Centre for Diffraction Data, Newton Square, PA, 2000.
- [151] S. Ananta, *Mater. Lett.*, 2004, **58**: 2781.
- [152] Powder Diffraction File No. 33-875, International Centre for DiffractionData, Newton Square, PA, 2000.
- [153] Powder Diffraction File No. 38-1459, International Centre for DiffractionData, Newton Square, PA, 2000.
- [154] Y. C. You, N. Park, K. H. Jung, H. L. Park, K. C. Kim, S. I. Mho and T. W. Kim, *J. Mater. Sci. Lett.*, 1994, **13**: 1682.

- [155] S. Ananta, R. Brydson and N. W. Thomas, *J. Eur. Ceram. Soc.*, 1999, **19**: 355.
- [156] Y. H. Yu, C. D. Feng, W. L. Yao, Y. Yang, C. E. Li and H. X. Yan, *J. Mater. Sci. Lett.*, 2001, **20**: 2189.
- [157] A. Wachtel, *J. Electrochem. Soc.*, 1964, **111**: 534.
- [158] R. Wongmaneerung, R. Yimnirun and S. Ananta, *Mater. Lett.*, 2006, **60**: 1447.
- [159] J. P. Guha, *J. Mater. Sci.*, 2001, **36**: 5219..
- [160] J. Ryu, J. J. Choi and H.E. Kim, *J. Am. Ceram. Soc.*, 2001, **84**: 902.
- [161] Powder Diffraction File No. 81-0861, International Centre for Diffraction Data, Newton Square, PA, 2000.
- [162] S. Ananta and N.W. Thomas, *J. Eur. Ceram. Soc.*, 1999, **19**: 629.
- [163] Powder Diffraction File No. 25-0443, International Centre for DiffractionData, Newton Square, PA, 2000.
- [164] Powder Diffraction File No. 82-0338, International Centre for DiffractionData, Newton Square, PA, 2000.
- [165] J. P. Guha, *J. Mater. Sci.*, 1999, **34**: 4985.
- [166] L. P. Cruz, A. M. Segadães, J. Rocha and J. D. Pedrosa de Jesus, *Mater. Res. Bull.*, 2002, **37**: 1163.
- [167] N. K. Kim, *Mater. Lett.*, 1997, **32**: 127.
- [168] O. Guillon, F. Thiebaud, D. Perreux, C. Courtoris, P. Champagne, A. Leriche and J. Crampon, *J. Eur. Ceram. Soc.*, 2005, **25**: 2421.
- [169] L. E. Cross, *Ferroelectrics*, 1987, **76**: 241.
- [170] G. Robert, M.D. Maeder, D. Damjanovic and N. Setter, *J. Am. Ceram. Soc.*, 2001, **84**: 2869.

- [171] Powder Diffraction File No. 6-452, International Centre for Diffraction Data, Newton Square, PA, 2000.
- [172] A. Udomporn and S. Ananta, *Curr. Appl. Phys.*, 2004, **4**: 186.
- [173] Powder Diffraction File No. 77-1971, International Centre for Diffraction Data, Newton Square, PA, 2000.
- [174] J. Tartaj, C. Moure, L. Lascano and P. Duran, *Mater. Res. Bull.*, 2001, **36**: 2301.
- [175] M. L. Calzada, M. Algueró and L. Pardo, *J. Sol-Gel Sci. Technol.*, 1998, **13**: 837.
- [176] S. Ananta and N. W. Thomas, *J. Eur. Ceram. Soc.*, 1999, **19**: 1873.
- [177] A. Yamaji, Y. Enomoto and K. Kinoshita, *J. Am. Ceram. Soc.*, 1977, **60**: 97.
- [178] B. M. Jin, J. Kim and S. C. Kim, *Appl. Phys. A*, 1997, **65**: 53.
- [179] V. G. Gavril'yachenko, R. I. Spinko, M. A. Martynenko and E. G. Fesenko, *Fiz. Tverd. Tela* **12**, 1532 (1970); *Sov. Phys. Solid State (English Transl.)* 1970, **12**: 1203.
- [180] Jona, F. and Shirane, G. (1962). *Ferroelectric Crystal*. Oxford: Pergamon Press.
- [181] M. J. Huan, E. Furman, S. J. Jang, H. A. McKinstry and L. E. Cross, *J. Appl. Phys.*, 1987, **62**: 3331.
- [182] S. Ananta, R. Tipakonitkul and T. Tunkasiri, *Mater. Lett.*, 2003, **57**: 2637.
- [183] JCPDS-ICDD Card no. 21-949, International Centre for Diffraction Data, Newtown Square, PA, 2000.
- [184] C. Suryanaratana, *Prog. Mater. Sci.*, 2001, **46**: 1.

- [185] A. Revesz, T. Ungar, A. Borbely and J. Lendvai, *Nanostruct. Mater.*, 1996, **7**: 779.
- [186] P. C. Kang, Z. D. Yin and O. Celestine, *Mater. Sci. Eng. A*, 2005, **395**: 167.
- [187] Udomporn, A. "Preparation and Structural Characterization of Lead Magnesium Niobate-Lead Titanate Ceramics," Ph.D. Thesis, Chiang Mai University, 2004.
- [188] S. Fengbing, L. Qiang, Z. Haisheng, L. Chunhong, Z. Shixi and S. Dezhong, *Mater. Chem. Phys.*, 2004, **83**: 135.
- [189] D. H. Suh, D. H. Lee and N. K. Kim, *J. Eur. Ceram. Soc.*, 2002, **22**: 219.
- [190] J. Kelly, M. Leonard, C. Tantigate and A. Safari, *J. Am. Ceram. Soc.*, 1997, **80**: 957.
- [191] K.-P. Chen, C. Li, X. Zhang and Y. Huang, *Mater. Lett.*, 2002, **57**: 20.
- [192] J. Zhang, L. Wang, L. Shi, W. Jiang and L. Chen, *Scripta Mater.*, 2007, **56**: 241.
- [193] German, R. M. (1996). *Sintering Theory and Practice*. Chichester: John Wiley & Sons Ltd..
- [194] S.E. Park and T.R. Shrout, *Mater. Res. Innov.*, 1997, **1**: 20.
- [195] R. Yimnirun, S. Ananta and P. Laoratanakul, *J. Eur. Ceram. Soc.*, 2005, **25**: 3235.
- [196] M. Ausloo, *J. Phys. C: Solid State Phys.*, 1985, **18**: L1163.
- [197] H. Arndt and G. Schmidt, *Ferroelectrics*, 1988, **79**: 149.
- [198] G. Robert, M.D. Maeder, D. Damjanovic and N. Setter, *J. Am. Ceram. Soc.*, 2001, **84**: 2869.
- [199] G. Burns and F.H. Dacol, *Phys. Rev. B*, 1983, **28**: 2527.

[200] G. Burns and F.H. Dacol, *Solid State Commun.*, 1983, **48**: 853.



ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่
Copyright© by Chiang Mai University
All rights reserved