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223

SAMPLE PREPARATION AND DIELECTRIC SPECTRUM EQUIVALENT CIRCUITS MODELING FOR $Bi_2Mn_2O_7$

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ABSTRACT
A $Bi_2Mn_2O_7$ ceramic sample was prepared by solid state reaction method. Its dielectric property was then characterized by impedance analysis within frequencies range from 10_2 Hz to 10_6 Hz and temperatures range from room temperature to 450°C. All spectrums were then normalized into a single master curve. The dielectric response mechanism observed in the sample master curve spectrum were modeled by combinations of diffusive, quasi-dc, bound charge (dipole-like) elements with a nondispersive capacitor. The experimental data are in close agreement with the value obtained from equivalent circuit

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REFERENCES
[1] N.A. Hill (2000); J. Phys. Chem. B 104, 6694
[2] Alessio Filippetti and N.A. Hill (2001); J. Magn. Magn. Mater. 236,176
[3] N.A. Hill and Alessio Filippetti (2002); J. Magn. Magn. Mater. 242-245, 976
[4] T. Atou, H. Chiba, K. Ohoyama, Y. Yamaguchi and Y. Syono (1999); J. Solid State Chem. 145, 639
[5] C.W. Nam, L. Liu, N. Cai, J. Zhai, Y.H. Lin, L. J. Dong, C. X. Xiong (2002); Appl. Phys. Lett. 81, 3831
[6] L. Fuentes, M. García, J. Matutes-Aquino and D. Ríos-Jara (2003); J. Alloys and Compounds xxx, xxxx
[7] V. Bohnar, P. Lunkenheimer, A. Loidl, E.E. Kaul and C. Geibel (2002); Solid State Comm. 122, 595
[8] A. Moreira dos Santos, S. Parashar, A.R. Raju, Y.S. Zhao, A.K. Cheetham, C.N.R. Rao, (2002); Solid State Comm. 122, 49
[9] M.F. Kabir, W. M. Daud, K. Khalid and H.A.A. Sidek (2000); Wood and Fiber Science 32(4), 450
[10] L. A. Dissado and R. M. Hill (1984); J. Chem. Soc., Faraday Trans. 2 80, 291
[11] T. Ramdeen, L. A. Dissado, R. M. Hill (1984); J. Chem. Soc., Faraday Trans. 1 80, 325
[12] R. M. Hill and Colin Pickup (1985); J. Mater. Sci. 20, 4431
[13] L. A. Dissado, R. C. Rowe, A. Haidar, and R. M. Hill (1987); J. Colloid Interface Sci. 117(2), 310
[14] A. K. Jonscher (1983); Dielectric Relaxation in Solids; Chelsea Dielectrics Press Ltd, London; Chap3, pp. 101-110
[15] A. K. Jonscher (1983); Thin Solid Films 100, 329
[16] A. K. Jonscher (1996); Universal Relaxation Law; Chelsea Dielectric Press Ltd, London; Chap 10, pp. 299 – 300