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62

CHARACTERIZATION OF HOLMIUM IN TELLURITE GLASS

Oo Hooi Ming*, Halimah Mohamed Kamari and Wan Mohd Daud Wan Yusoff
PhysicsDepartment, Faculty of Science,
University Putra Malaysia, 43400 UPM Serdang,
Selangor, Malaysia
**Corresponding Author: halimah@science.upm.edu.my*

ABSTRACT

A series of holmium tellurite glasses $(Ho_2O_3)_x(TeO_2)_{100-x}$ were prepared by using normal quenching method. Holmium (III) oxide add as network modifier in the tellurite base glass and hence its effect the structural of the tellurite glass. The density and refractive index of this glass system increase when the holmium content increase. The molar volume of holmium tellurite glass decrease as holmium content increase. This is because of non bridging oxygen (NBO) was formed in the glass network. The XRD pattern show the structure of the glass sample and the result of the FTIR shows the bonding of the glass sample formed.

Keywords: Holmium (III) oxide; tellurite glass
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REFERENCES

[1] Yanling Wang, Shixun Dai, Feifei Chen, Tiefeng Xu, Qiuhua Nie, *Materials Chemistry and Physics* **113** (2009) 407-411
[2] J. C. Boyer, F. Vetrone, J. A. Capobianco, *Journal of Applied Physics*, **93** (12) (2003) 9460
[3] H.A.A. Sidek, S. Rosmawati, Z.A. Talib, M.K. Halimah and W.M. Daud, *American Journal Applied Science*, **6** (8) 2009 1489-1494
[4] Guonian Wang, Junjie Zhang, Shixun Dai, Lei Wen, Jianhu Yang, *Journal of Molecular Structure* **750** (2005) 1-6
[5] Kang Min Ok, N.S.P. Bhuvanesh, P. Shiv Halasyamani, *Inorg. Chem.* **4**, 2001 1978-1980
[6] Yanfei Chen, Qiuhua Nie, Tiefeng Xu, Shixun Dai, Xunshi Wang, *Journal Non-Crystalline Solids* **354** (2008) 3468–3472
[7] D. Munoz-Martin, M.A. Villegas, J. Gonzalo, J. M. Fernandez-Navarro, *Journal of the European Ceramic Society* **29** (2009) 2903-2913
[8] Boris L. Shivachev, Todor Petrov, Hitoki Yoneda, Rositsa Titorenkova, Boriana Mihailova, *Scripta Materialia* **61** (2009) 493-496
[9] R. El-Mallawany, M. Dirar Abdalla, I. Abbas Ahmed, *Material Chemistry and Physics* **109** (2008) 291-296
[10] V. Rajendran, N. Palanivelu, B.K. Chaudhuri, K. Goswami, *Journal Non-Crystalline Solids* **320** (2003) 195–209
[11] Tiefeng Xu, Feifei Chen, Shixun Dai, Xiang Shen, Xunsi Wang, *Journal Non-Crystalline Solids* **357** (2011) 2219-2222
[12] J. N. Ayuni, M.K. Halimah, Z.A. Talib, H.A.A. Sidek, W.M. Daud, *Materials Science and Engineering* **17** (2011) 012027
[13] P.R. Rejikumar, P.V. Jyothy, Siby Mathew, Vinoy Thomas, N.V. Unnkrishnan, *Physica B* **405** (2010) 1513-1517