ISSN 1516-392X

NEGATIVE THERMAL EXPANSION IN YInMo3O12

Monica Ari[1]
Bojan Marinkovic[1]
Paula Jardim[1]
Roberto De Avillez[1]
Fernando Rizzo[1]
Fabio Ferreira[2]

Abstract
YInMo3O12 was produced by solid state reaction. To verify the phase composition of the synthesized samples was used a microscope (SEM) equipped with EDS. To determine the thermal expansion, a high resolution X-ray powder diffraction data were collected at 423, 573, 723, 873, 1023K at Brazilian Synchrotron Light Laboratory (LNLS, D10B-XPD beamline). Data were obtained from 10 to 70° (2 theta), steps of 0.008° with remaining time of 2s and λ = 1,23989Å. A calibration curve for the furnace was obtained using a NIST Si sample. The linear thermal expansion coefficient was -3.78 x 10-6 K-1 determined by Rietveld refinement performed using Topas academic. It was determined by termogravimetric analyses that YInMo3O12 is hygroscopic at room temperature. No change in the structure (orthorhombic, Pbcn) was observed by DSC analyses from room temperature to 873K.Acknowledgements: Authors thanks LNLS for D10B-XPD 7756 project and Ari M. thanks FAPERJ for postdoctoral fellowship.

[1] *PUC-Rio.*
[2] *UFABC.*