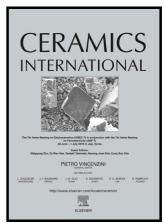
Author's Accepted Manuscript

Structural, Dielectric and Electrical Characteristics of BiFeO₃ -NaNbO₃ Solid Solutions

Manojit De, Sugato Hajra, Rashmi Tiwari, Sushrisangita Sahoo, R.N.P. Choudhary, H.S. Tewari



www.elsevier.com/locate/ceri

PII: S0272-8842(18)30845-9

DOI: https://doi.org/10.1016/j.ceramint.2018.03.263

Reference: CERI17900

To appear in: Ceramics International

Received date: 3 February 2018 Revised date: 13 March 2018 Accepted date: 29 March 2018

Cite this article as: Manojit De, Sugato Hajra, Rashmi Tiwari, Sushrisangita Sahoo, R.N.P. Choudhary and H.S. Tewari, Structural, Dielectric and Electrical Characteristics of BiFeO₃ -NaNbO₃ Solid Solutions, *Ceramics International*, https://doi.org/10.1016/j.ceramint.2018.03.263

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Structural, Dielectric and Electrical Characteristics of BiFeO₃-NaNbO₃ Solid Solutions

Manojit De¹, Sugato Hajra², Rashmi Tiwari¹, Sushrisangita Sahoo³, R N P Choudhary³, H S Tewari^{1*}

¹Department of Pure and Applied Physics, Guru Ghasidas Vishwavidyalaya, Bilaspur, India

²Department of Electronics and Instrumentation and ³Department of Physics, Siksha O Anusandhan, deemed to be University, Bhubaneswar, India

*Corresponding author. tewari.hs@gmail.com

Abstract:

The paper mainly reports the effect of NaNbO₃ (as a doping material) on the structural (crystal data and microstructure), dielectric (permittivity, dissipation of energy) and electrical (impedance, modulus, and conductivity) characteristics of BiFeO₃ forming a solid solution of Bi_{0.8}Na_{0.2}Fe_{0.8}Nb_{0.2}O₃. By analysis of the room temperature X-ray diffraction data, the formation of pure-phase material and its crystal data were obtained. The comprehensive studies of dielectric parameters (relative dielectric constant (ε_r), and tangent loss (tan δ) were measured in a wide range of temperature (25-450°C) and frequency (1 kHz-1MHz). The surface morphology, obtained with a gold-coated pellet sample, exhibits the high density of the sample. The frequency-temperature dependence of conductivity follows the Johnson's power Universal law. The electrical behavior of the compound has been studied using complex impedance and

Download English Version:

https://daneshyari.com/en/article/7887311

Download Persian Version:

https://daneshyari.com/article/7887311

<u>Daneshyari.com</u>