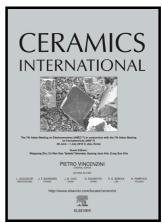
Author's Accepted Manuscript

Magneto-electric properties of xNi_{0.7}Zn_{0.3}Fe₂O₄ – (1-x)BaTiO₃ multiferroic composites

A.S. Dzunuzovic, M.M. Vijatovic Petrovic, J.D. Bobic, N.I. Ilic, M. Ivanov, R. Grigalaitis, J. Banys, B.D. Stojanovic



www.elsevier.com/locate/ceri

PII: S0272-8842(17)32169-7

DOI: https://doi.org/10.1016/j.ceramint.2017.09.229

Reference: CERI16400

To appear in: Ceramics International

Received date: 15 June 2017

Revised date: 14 September 2017 Accepted date: 28 September 2017

Cite this article as: A.S. Dzunuzovic, M.M. Vijatovic Petrovic, J.D. Bobic, N.I. Ilic, M. Ivanov, R. Grigalaitis, J. Banys and B.D. Stojanovic, Magneto-electric properties of xNi_{0.7}Zn_{0.3}Fe₂O₄ – (1-x)BaTiO₃ multiferroic composites, *Ceramics International*, https://doi.org/10.1016/j.ceramint.2017.09.229

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.

Magneto-electric properties of $xNi_{0.7}Zn_{0.3}Fe_2O_4 - (1-x)BaTiO_3$ multiferroic

composites

A.S. Dzunuzovic^a, M.M. Vijatovic Petrovic^a, J.D. Bobic^a, N.I. Ilic^a, M. Ivanov^b, R. Grigalaitis^b,

J. Banys^b, B.D. Stojanovic^a

^aInstitute for Multidisciplinary Research University of Belgrade, Belgrade, Serbia

^bFaculty of Physics, Vilnius University, Lithuania

Abstract

Di-phase ceramic composites, with general formula (1-

x)BaTiO₃(x=0.9,0.7,0.5,0.3,0.1), were prepared by a mixing method. X-ray analysis, for powder

and ceramics, indicated the formation of ferrite and barium titanate phases without the presence

of the impurities. SEM analysis indicated that the composite morphology contained two types of

grains, polygonal and rounded. Homogeneous microstructure and the smallest grain size were

obtained in ceramics with 70 % of barium titanate. The electrical properties of these materials

were investigated using impedance spectroscopy, dielectric and ferroelectric measurements. The

NZF-BT(30-70) composite has shown better electrical properties in comparison to other

investigated ceramics, confirmed by dielectric and ferroelectric data analysis. Saturation

magnetization and coercive field decreased with the increase of the content of ferroelectric

phase.

Keywords: B. Composites, C. Impedance, C. Magnetic properties, Auto-combustion

Corresponding author: Tel: +381 11 2085 039, Fax: +381 11 2085062 e-mail:

miravijat@yahoo.com (Mirjana Vijatovic Petrovic)

1

Download English Version:

https://daneshyari.com/en/article/7889215

Download Persian Version:

https://daneshyari.com/article/7889215

<u>Daneshyari.com</u>