

Author's Accepted Manuscript

FEATURES OF THE STRUCTURE AND MACRO RESPONSES IN HARD FERRO PIEZOCERAMICS BASED ON THE PZT SYSTEM

K.P. Andryushin, I.N. Andryushina, L.A. Shilkina,
A.V. Nagaenko, S.I. Dudkina, A.A. Pavelko, I.A.
Verbenko, L.A. Reznichenko



www.elsevier.com/locate/ceri

PII: S0272-8842(18)31768-1
DOI: <https://doi.org/10.1016/j.ceramint.2018.07.042>
Reference: CER118764

To appear in: *Ceramics International*

Received date: 21 June 2018
Revised date: 23 June 2018
Accepted date: 4 July 2018

Cite this article as: K.P. Andryushin, I.N. Andryushina, L.A. Shilkina, A.V. Nagaenko, S.I. Dudkina, A.A. Pavelko, I.A. Verbenko and L.A. Reznichenko, FEATURES OF THE STRUCTURE AND MACRO RESPONSES IN HARD FERRO PIEZOCERAMICS BASED ON THE PZT SYSTEM, *Ceramics International*, <https://doi.org/10.1016/j.ceramint.2018.07.042>

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.

**FEATURES OF THE STRUCTURE AND MACRO RESPONSES IN HARD
FERRO PIEZOCERAMICS BASED ON THE PZT SYSTEM**

**K.P. Andryushin, I.N. Andryushina, L.A. Shilkina, *A.V. Nagaenko, S.I. Dudkina,
A.A. Pavelko, I.A. Verbenko, L.A. Reznichenko**

Research Institute of Physics, Southern Federal University, Rostov-on-Don, Russia

** Scientific Design and Technological Bureau "Piezopribor", Southern Federal
University, Rostov-on-Don, Russia*

Corresponding author: Konstantin Andryushin

E-mail address: kpandryushin@gmail.com

Phone number: +78632434066

Mailing address: 344090, Russian Federation, Rostov-on-Don, Stachki ave, 194

Abstract

The structure, microstructure, dielectric and piezoelectric properties of two ferroelectric materials based on the modified $\text{PbTiO}_3\text{-PbZrO}_3$ (PZT) system, prepared using the conventional ceramic technology and hot pressing method have been studied, and correlations among their elemental composition, phase constitution, grain structure and macro responses have been investigated. Specific features of ferroelectric-paraelectric phase transitions during the variation of the frequency of an alternating electric field (in the interval of 25 Hz ÷ 2 MHz) have been singled out. It was shown that the properties of samples produced without an externally applied pressure are not lower than those of the hot pressed samples thus allowing their perspective use in frequency-selective devices such as variable bandwidth filters.

Keywords: PZT, Ferroelectric properties, Spectroscopy, Functional applications

Download English Version:

<https://daneshyari.com/en/article/8948517>

Download Persian Version:

<https://daneshyari.com/article/8948517>

[Daneshyari.com](https://daneshyari.com)