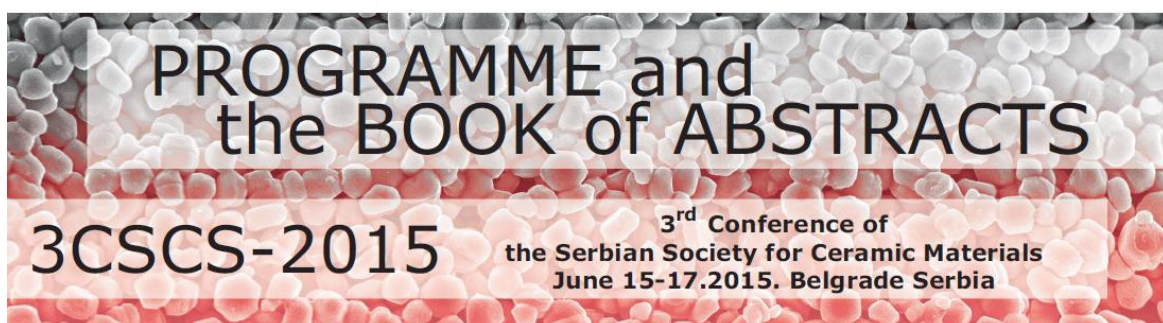


The Serbian Society for Ceramic Materials  
The Academy of Engineering Sciences of Serbia  
Institute for Multidisciplinary Research - University of Belgrade  
Institute of Physics - University of Belgrade  
Vinča Institute of Nuclear Sciences - University of Belgrade



Edited by:  
Branko Matović  
Zorica Branković  
Dušan Bućevac  
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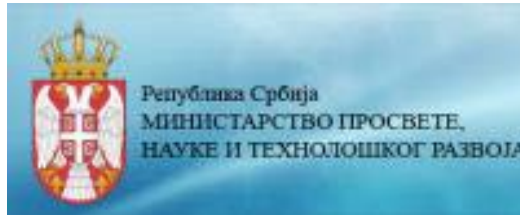
# **PROGRAMME AND THE BOOK OF ABSTRACTS**

**3<sup>rd</sup> Conference of The Serbian Society for  
Ceramic Materials**

**June 15-17, 2015  
Belgrade, Serbia  
3CSCS-2015**

Edited by:  
**Branko Matović  
Zorica Branković  
Dušan Bućevac  
Vladimir V. Srdić**

**SPECIAL THANKS TO**



*Braća Rajković*



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## WELCOME MESSAGE

On behalf of the organizers and organizing committee of the 3<sup>rd</sup> Conference of the Serbian Society for Ceramic Materials (3CSCS-2015), I would like to extend my warmest welcome to all of you for attending the 3CSCS-2015. The conference is hosted and organized by the Serbian Society for Ceramic Materials, and co-organized by Academy of Engineering Sciences of Serbia, Institute for Multidisciplinary Research - University of Beograd, Institute of Physics - University of Beograd, Vinca Institute for Nuclear Sciences - University of Beograd.

The goal of the Conference is to provide a platform for academic exchange among participants from universities, institutes, companies around the region in the field of ceramics research as well as to explore new direction for future development. 3CSCS-2015 aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results about all aspects of Ceramic Materials. It also provides the premier inter-multi-trans-disciplinary forum for researchers, practitioners and educators to present and discuss the most recent innovations, trends, and concerns, practical challenges encountered and the solutions adopted in the field of Ceramic Materials. We have received more than 100 abstracts submitted from 16 countries.

The Conference will feature four plenary lectures, 25 invited talks and more than 80 oral and poster presentations as well as exhibitions of some new ceramic materials and devices. 3CSCS-2015 includes Ceramic Powders, Characterization and Processing, High temperature Phenomena, Sintering, Microstructure Design and Mechanical Properties, Electro and Magnetic Ceramics, Ceramic Composites, Membranes and Multimaterials, Traditional Ceramics and Computing in Materials Science. Exhibitions from company sponsors will be held at the Conference as well.

We are grateful for the support from the Ministry of Education, Science and Technological Development of the Republic of Serbia. We would also like to express our sincere thanks to the symposia organizers, session chairs, presenters, exhibitors and all the Conference attendees for their efforts and enthusiastic support in this exciting time in Belgrade. I look forward to meeting you and interacting with you at Conference.

3CSCS-2015 President

Branko Matovic



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## STRUCTURE AND CHARACTERIZATION OF BaTiO<sub>3</sub>-Ni<sub>(1-x)</sub>Zn<sub>x</sub>Fe<sub>2</sub>O<sub>4</sub> COMPOSITES

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NiZnFe<sub>2</sub>O<sub>4</sub> (NZF) powder was prepared by auto-combustion method starting from nickel, zinc and iron nitrates. Thermal treatment was performed at 1000 °C for 1 h after which the nickel ferrite powder was formed. Barium titanate (BT) powder was prepared with same method using titanium nitrate and barium nitrate as a starting reagents. Multiferroic composites with formula BaTiO<sub>3</sub>-Ni<sub>(1-x)</sub>Zn<sub>x</sub>Fe<sub>2</sub>O<sub>4</sub> (x = 0.3, 0.5, 0.7) were prepared by mixing chemically obtained NZF and BT powders in the planetary mill for 24 h. Powders were pressed and sintered at 1170 °C for 4 h. Samples were characterized by XRD, Raman, SEM, IR. Magnetic and electrical measurements were also carried out. X-ray and Raman measurements confirmed the presence of NZF, BT phases and the traces of barium ferrite phase. The microstructure of the ceramics shows (Fig. 1.) the formation of polygonal (NZF grains), rounded (BT grains) and plate like grains (barium ferrite phase). The impedance analyses of multiferroic composites at 200 °C have shown the contribution of both, grain and grain boundary resistivity.

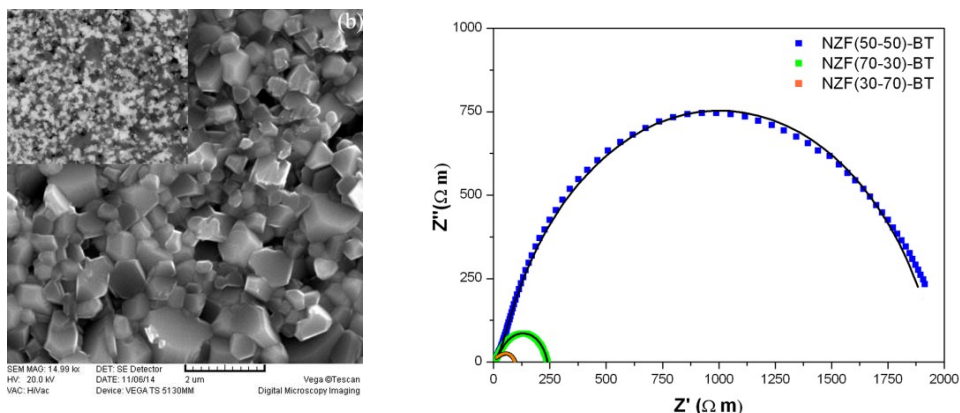


Figure 1. SEM images of NZF(50-50)-BT and impedance measurements

