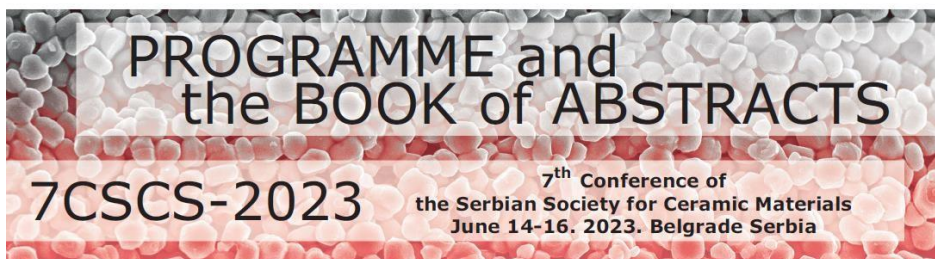


The Serbian Society for Ceramic Materials
Institute for Multidisciplinary Research (IMSI), University of Belgrade
Institute of Physics, University of Belgrade
Center of Excellence for the Synthesis, Processing and Characterization of
Materials for use in Extreme Conditions "CEXTREME LAB" - Institute of
Nuclear Sciences "Vinča", University of Belgrade
Faculty of Mechanical Engineering, University of Belgrade
Center of Excellence for Green Technologies, Institute for Multidisciplinary
Research, University of Belgrade
Faculty of Technology and Metallurgy, University of Belgrade



Edited by:
Branko Matović
Jelena Maletaškić
Vladimir V. Srdić

Programme and Book of Abstracts of The Seventh Conference of The Serbian Society for Ceramic Materials **publishes abstracts from the field of ceramics, which are presented at international Conference.**

Editors-in-Chief

Dr Branko Matović
Dr. Jelena Maletaškić
Prof. Vladimir V. Srdić

Publisher

Institut za multidisciplinarna istraživanja
Kneza Višeslava 1, 11000 Belgrade, Serbia

For Publisher

Dr Dragica Stanković

Printing layout

Dr. Jelena Maletaškić, Vladimir V. Srdić

Press

Faculty of Technology and Metalurgy, Research and Development Centre of Printing
Technology, Karnegieva 4, Belgrade, Serbia

Published: 2023

Circulation: 120 copies

CIP – Каталогизacija u publikaciji
Narodna biblioteka Srbije, Beograd

666.3/.7(048)
66.017/.018(048)

DRUŠTVO za keramičke materijale Srbije, Konferencija (7; 2023, Beograd)

Programme ; and the Book of Abstracts / 7th Conference of The Serbian Society for Ceramic Materials, 7CSCS-2023, June 14-16, 2023 Belgrade, Serbia ; [organizers] The Serbian Society for Ceramic Materials ... [et al.] ; edited by Branko Matović, Aleksandra Dapčević, Vladimir V. Srdić. - Belgrade :

Institut za multidisciplinarna istraživanja, 2023 (Belgrade : Faculty of technology and metalurgy, Research and development centre of printing technology). -124 str. : ilustr. ; 25 cm

Tiraž 120. – Str. 7: Welcome message / Branko Matović. - Registar.

ISBN 978-86-80109-24-4

a) Керамика -- Апстракти b) Наука о материјалима -- Апстракти v)
Наноматеријали -- Апстракти

COBISS.SR-ID 117544969

The Serbian Society for Ceramic Materials
Institute for Multidisciplinary Research, University of Belgrade
Institute of Physics, University of Belgrade
Center of Excellence for the Synthesis, Processing and Characterization of
Materials for use in Extreme Conditions “CEXTREME LAB” -
Institute of Nuclear Sciences “Vinča”, University of Belgrade
Faculty of Mechanical Engineering, University of Belgrade
Center of Excellence for Green Technologies, Institute for Multidisciplinary
Research, University of Belgrade
Faculty of Technology and Metallurgy, University of Belgrade

PROGRAMME AND THE BOOK OF ABSTRACTS

**7th Conference of The Serbian Society for
Ceramic Materials**

June 14-16, 2023
Belgrade, Serbia
7CSCS-2023

Edited by:
Branko Matović
Jelena Maletaškić
Vladimir V. Srdić

P-39

INVESTIGATING NTC THERMISTOR, FERROELECTRIC AND ELECTRIC PROPERTIES OF Fe_2TiO_5

Zorka Ž. Vasiljević¹, Milena P. Dojčinović¹, Nikola Ilić²,
Jelena Vujančević³, Maria Vesna Nikolić¹

¹*University of Belgrade, Institute for Multidisciplinary Research,
Belgrade, Serbia*

²*Vinča Institute of Nuclear Sciences - National Institute of the Republic of
Serbia, University of Belgrade, Belgrade, Serbia*

³*Institute of Technical Science of SASA, Belgrade, Serbia*

Pure phase orthorhombic pseudobrookite (Fe_2TiO_5) was synthesized using a modified sol-gel method. Bulk samples were obtained by uniaxial pressing of the obtained powder into compacts sintered at 900 °C for 2 h. A noticeable NTC thermistor effect was noted with a $B_{20/55}$ value of 5747 K and high resistivity of 45 $\text{M}\Omega\cdot\text{cm}$ at 25 °C. A non-linear current-voltage characteristic was observed in the voltage range (0.2–1100 V) at room temperature (25 °C). Non-saturated (lossy) P - E loops were obtained at both measured frequencies (100 Hz and 1 kHz) more expressed for the higher measured frequency, with the maximal polarization of 0.291 $\mu\text{C}/\text{cm}^2$ and remanent polarization of 0.123 $\mu\text{C}/\text{cm}^2$ for 20 kV/cm^2 and 1 kHz. Complex impedance measured in the temperature range 20–330 °C enabled analysis of the contribution of grain boundary and grains to the conduction mechanism. Bulk conductivity data determined in this temperature range was analyzed using Jonscher's universal dielectric response model and showed that the conduction process followed the nearest neighbor hopping conduction mechanism.