

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

A microscopic image of ceramic particles, showing a dense arrangement of small, rounded grains. The top half of the image is in grayscale, while the bottom half is in color, showing a reddish-orange hue. The text is overlaid on this image.

PROGRAMME and the BOOK of ABSTRACTS

4CSCS-2017

4th Conference of
the Serbian Society for Ceramic Materials
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Branko Matović
Zorica Branković
Dušan Bućevac
Vladimir V. Srdić

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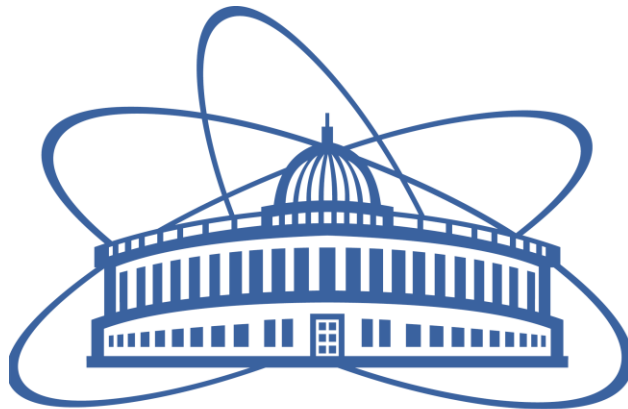
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ZnO NANOPOWDERS OBTAINED BY THERMOLYSIS OF ZINC BENZENEDICARBOXYLATE COMPLEXES WITH 2,2'-DIPYRIDYLAMINE

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Coordination chemistry provides the know-how for the synthesis of the precursor compounds with variable composition and structures, while the thermal induced changes may control the crystalline structure, phase composition, morphology, size, texture, and other properties of their pyrolytic products [1]. In terms of coordination chemistry and thermal analysis, our research has been focused on the synthesis of mixed ligand complexes [2] that can be used as precursors for obtaining diverse (compositional and structural) oxides, depending on their thermoreactivity.

The main goal of this approach was the reduction of the temperature at which the oxides are formed (up to 600–700 °C) comparative to the standard ceramic methods. The effect of the different atmospheres (dynamic air or N₂) on the thermal decomposition of Zn benzenedicarboxylate complexes with 2,2'-dipyridylamine was investigated. The formation of ZnO nanopowders was identified using XRPD and FESEM techniques. The influence of the adopted architecture of ternary metal complexes used as templates for ZnO nanopowders was discussed. The thermal decomposition kinetics of precursors was studied under non-isothermal conditions. In addition, the antibacterial activity of obtained ZnO nanopowders was also analyzed.

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