

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
June 14-16.2017. Belgrade Serbia

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

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PHOTODEGRADATION OF ORGANIC DYE USING BiFeO₃ PARTICLES SYNTHESIZED BY ULTRASOUND ROUTE

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BiFeO₃ precursor powder was synthesized by ultrasound assisted sol-gel route at relatively low temperature, starting from Bi-nitrate, Fe-nitrate, and ethylene glycol. Structural, optical, and photocatalytic properties of the obtained powder were investigated. X-ray diffraction analysis confirmed that thermal treatment of precursor powder at 500 °C led to formation of pure phase BiFeO₃. The determined band gap was 2.20 eV, indicating its potential application as visible-light-response photocatalyst. The powder is used for photocatalytic degradation of typical organic azo dye Mordant Blue 9 in concentration of 50 mg/l. Measurements were performed for different times of irradiation and pH of the dye solution. Changes in UV-Vis absorption spectra revealed the decolorization and decomposition of organic dye during the photodegradation process. Photodegradation products were analyzed by HPLC technique, and mechanism of photocatalytic degradation of organic dye was proposed.