

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 gradient from white to red. 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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Editors-in-Chief

Dr Branko Matović
Dr. Zorica Branković
Dr. Dušan Bučevac
Prof. Vladimir V. Srdić

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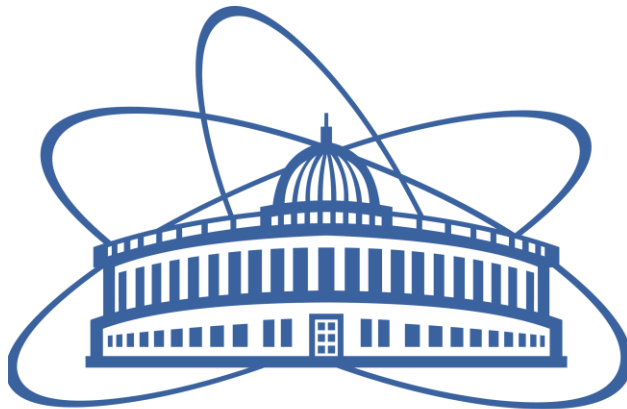
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SPECIAL THANKS TO



JOINT INSTITUTE
FOR NUCLEAR RESEARCH

O-3

INFLUENCE OF SYNTHESIS CONDITIONS ON MORPHOLOGICAL FEATURES OF SBA-15

Maja Kokunešoski¹, Aleksandra Šaponjić¹, Zvezdana Baščarević², Zlatko Rakočević¹, Đorđe Šaponjić¹, Branko Matović¹, Biljana Babić¹

¹University of Belgrade, Vinča Institute of Nuclear Sciences, Belgrade, Serbia

²University of Belgrade, Institute for Multidisciplinary Research, Belgrade, Serbia

Mesoporous SBA-15 materials, of high specific surface area, ($\sim 700 \text{ m}^2 \text{ g}^{-1}$), were synthesized by using block copolymer Pluronic P123 as a template and tetraethoxysilane as a silica source. The obtained materials were characterized by X-ray diffraction, scanning electron microscopy (SEM), energy dispersive X-ray (EDS) analysis, and atomic force microscopy (AFM). It was found that small modifications of synthesis conditions influenced morphological features of the synthesized SBA-15 samples. The SEM analysis has shown that the SBA-15 synthesized at a lower temperature and a longer time of reaction (80 °C, 48 h) provided elongated rod-shaped grains about 1 μm long. The other sample synthesized at a higher temperature and a shorter time of reaction (100 °C, 24 h) has rounded grains and grains of regular spherical shape with diameters up to 2 μm . The EDS analysis confirmed that the particles of both synthesized samples were of SiO_2 content. In addition, the AFM analysis has shown different surface morphologies of the materials synthesized under various conditions.

O-4

NANOSCALE-TO-BULK: SIZE-DEPENDENT CRYSTALLINITY OF CERAMIC OXIDES

Stefan Bromley^{1,2}

¹Universitat de Barcelona, Barcelona, Spain

²Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain

Naturally abundant and inherently a reactive electronegative element, oxygen chemically bonds with almost all other atoms to produce a corresponding oxide. Numerous ceramic oxide materials have had a massive technological impact in fields as diverse as catalysis, abrasives, absorbents, photovoltaics, and electronics. Key to this success is the wide range of chemical and physical properties exhibited