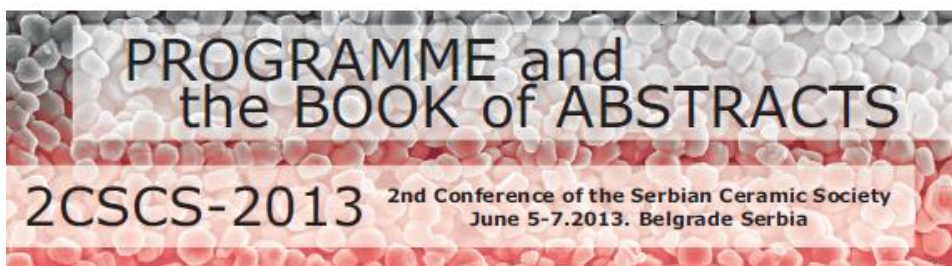


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Institute of Physics - University of Belgrade  
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Snežana Bošković  
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Zorica Branković

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# **PROGRAMME AND THE BOOK OF ABSTRACTS**

**2<sup>nd</sup> Conference of The Serbian Ceramic Society**

**June 5-7, 2013  
Belgrade, Serbia  
2CSCS-2013**

Edited by:  
**Snežana Bošković  
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<b>C. Stan, C. Andronesu, A. Rusu, J. Pande, C. Munteanu, E.M. Anghel, D. Culita, I. Atkinson, V. Fruth</b> SYNTHESIS AND CHARACTERISATION OF Sr-SiO <sub>2</sub> POWDERS WITH ORDERED MESOPORES AND ITS POTENTIAL APPLICATIONS IN DRUG DELIVERY .....	62
<b>D. Luković Golić, Z. Branković, N. Daneu, A. Rečnik, G. Branković</b> ZnO MESOCRYSTALS FROM SOLVOTHERMAL SYNTHESIS .....	63
<b>D. Marinčev, M. Grujić-Brojčin, S. Stojadinović, M. Radović, M. Šćepanović, Z.D. Dohčević-Mitrović</b> THE RAMAN SPECTROSCOPY OF TiO <sub>2</sub> /WO <sub>3</sub> COATINGS FORMED BY PLASMA ELECTROLYTIC OXIDATION .....	63
<b>J. Luković, B. Babić, M. Prekajski, D. Bučevac, Z. Bašcarević, M. Kijevčanin, B. Matović</b> SYNTHESIS AND CHARACTERIZATION OF NANOMETRIC TUNGSTEN CARBIDE .....	64
<b>J. Ćirković, T. Srećković, K. Vojislavljević, Z. Branković, G. Branković</b> STRUCTURAL AND MICROSTRUCTURAL CHARACTERIZATION OF BST CERAMICS OBTAINED BY HYDROTHERMALLY ASSISTED COMPLEX POLYMERIZATION METHOD .....	65
<b>P.I. Pontón, L. Mancic, S. Savic, B.A. Marinkovic</b> FUNCTIONALIZATION OF THE TITANATE NANOTUBES WITH A SILANE COUPLING AGENT .....	65
<b>L.M. Nikolić, M. Milanović</b> APPLICATION OF THE LAYERED TITANATES IN WATER PURIFICATION ....	66
<b>M. Stojmenović, S. Bošković, S. Zec, B. Babić, B. Matović, S. Mentus, M. Žunić</b> PROPERTIES OF MULTIDOPED CeO <sub>2</sub> NANOPOWDERS SYNTHESISED BY GNP AND MGNP METHODS .....	67
<b>M. Vuković, Z. Branković, D. Poletić, A. Rečnik, G. Branković</b> SOLID-STATE SYNTHESIS AND CRYSTAL GROWTH OF PURE VALENTINITE ANTIMONY(III) OXIDE .....	67
<b>M. Boskovic, B. Sanz, S. Vranjes-Djuric, V. Spasojevic, G.F. Goya, B. Antic</b> ENCAPSULATION OF MAGNETITE NANOPARTICLES IN HUMAN SERUM ALBUMIN .....	68
<b>M. Omerašević, U. Jovanović, V. Pavlović, M. Čebela, S. Nenadović</b> CESIUM ADSORPTION AND PHASE TRANSFORMATION OF CLINOPTILOLITE	69
<b>M. Rosic, J. Zagorac, A. Devečerski, A. Egelja, A. Šaponjić, V. Spasojevic, B. Matovic</b> EXAMINATION OF NANOSTRUCTURED Ca <sub>1-x</sub> Gd <sub>x</sub> MnO <sub>3</sub> (x=0.05; 0.1; 0.15; 0.2) OBTAINED BY MODIFIED GLYCINE NITRATE PROCEDURE .....	69

P-8

## ZnO MESOCRYSTALS FROM SOLVOTHERMAL SYNTHESIS

Danijela Luković Golić<sup>1</sup>, Zorica Branković<sup>1</sup>, Nina Daneu<sup>2</sup>,  
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Mesocrystals represent a new class of nanostructured materials, made of crystallographically aligned nanoparticles. Due to their unique structural features they have many physicochemical properties, different from nanoparticulate materials and single crystal materials, which can provide better performance in some applications. Zinc oxide mesocrystals have been synthesized by the solvothermal method at 200 °C during 4 hours from slightly basic (pH = 8) precursor (ethanolic zinc acetate solution in the presence of lithium hydroxide). XRD analysis showed that precursor solution consists of zinc acetate and zinc-hydroxy-acetate. Structural and microstructural properties were analyzed using X-ray diffraction, field emission scanning electron microscopy and transmission electron microscopy. ZnO mesocrystals are hexagonal prisms with diameters of 80 – 200 nm and lengths of 100 – 200 nm, but several larger prisms have a hole in the center. Based on characterization results we have discussed the growth mechanism of ZnO mesocrystals. Dipolar nature of ZnO and planar structure of zinc-hydroxy-acetate with free position of the acetate ions between positively charge planes play crucial role in the formation of the ZnO mesocrystals during the solvothermal reaction.

P-9

## THE RAMAN SPECTROSCOPY OF TiO<sub>2</sub>/WO<sub>3</sub> COATINGS FORMED BY PLASMA ELECTROLYTIC OXIDATION

Danijela Marinčev<sup>1</sup>, Mirjana Grujić-Brojčin<sup>1</sup>, Stevan Stojadinović<sup>2</sup>,  
Marko Radović<sup>1</sup>, Maja Šćepanović<sup>1</sup>, Zorana D. Dohčević-Mitrović<sup>1</sup>

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The properties of pure TiO<sub>2</sub> and TiO<sub>2</sub>/WO<sub>3</sub> coatings formed by plasma electrolytic oxidation (PEO) of titanium in 12-tungstosilicic acid water solution have