The Serbian Ceramic Society
Vinča Institute of Nuclear Sciences, University of Belgrade
Institute for Multidisciplinary Research, University of Belgrade
Institute of Physics, University of Belgrade

PROGRAM AND THE BOOK OF ABSTRACTS

1st Conference of the Serbian Ceramic Society

March 17-18. 2011.
Belgrade, Serbia
1CSCS-2011

Edited by:
Snežana Bošković
Zorica Branković
Jasmina Grbović Novaković

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Snežana Bošković
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Sonja Veljović-Jovanović
Aleksandar Belić

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Snežana Bošković
Zorica Branković
Jasmina Grbović Novaković

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PROGRAM I KNJIGA APSTRAKATA
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1CSCS2011

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Snežana Bošković
Zorica Branković
Jasmina Grbović Novaković

Izdavači:
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Snežana Bošković
Jovan Nedeljković
Sonja Veljović-Jovanović
Aleksandar Belić

Urednici:
Snežana Bošković
Zorica Branković
Jasmina Grbović Novaković

Tehnički urednik:
Nikola Novaković

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PROGRAM:

THURSDAY, 17.03.2011. NEW BELGRADE MUNICIPAL HALL

8^{00}-9^{00} **REGISTRATION**

9^{00} -9^{30} **OPENING CEREMONY**

9^{30} - 10^{00} COCKTAIL

Chairman: S. Bosković, Z. Dohčević-Mitrović

10^{00} - 10^{45} ***Plenary lecture***

Marija Kosec
POLAR CERAMICS: NEW APPLICATIONS, NEW COMPOSITIONS, NEW STRUCTURES
Electronic Ceramic Department, Jozef Stefan Institute, Ljubljana, Slovenia

1. Synthesis and Processing

Chairman: S. Bosković, Z. Dohčević-Mitrović

10^{45} - 11^{15} ***Invited lecture***

Aleksandar Rečnik[1], Nina Daneu[1], Thomas Walther[2], Takashi Yamazaki[3], Masahiro Kawasaki[4] and Werner Mader[2]
STRUCTURE AND CHEMISTRY OF BASAL-PLANE INVERSION BOUNDARIES IN Sb_2O_3-DOPED ZnO
[1]Jozef Stefan Institute, Ljubljana, Slovenia,
[2]Anorg. Chemie, Univ. Bonn, Bonn, Germany,
[3]Depr. of Physics, Tokyo University of Science, Tokyo, Japan,
USA Incorporation, Peabody, Massachusetta, USA

Oral presentations

11^{15} - 11^{30} **Branko Matovic, Biljana Babic, Milena Rosic, Jelena Dukic, Ana Radosavljevic-Mihajlovic, Snezana Boskovic**
SYNTHESIS AND CHARACTERIZATION OF (Ba, Yb) DOPED CERIA ELECTROLYTES
Vinca Institute of Nuclear Sciences, Materials Science Laboratory, Belgrade Serbia

11^{30} - 11^{45} **B.M. Jović, U. Lačnjevac, V.D. Jović**
THE NON-NOBLE METAL COMPOSITES AS CATODES FOR HYDROGEN EVOLUTION: Ni-MoO_x COATINGS
Institute for Multidisciplinary Reserach, Belgrade, Serbia

11^{45} - 12^{00} **Coffee break**

Chairman: **V. Srdić, V. Urbanovich**

12^{00} - 12^{15} **U. Lačnjevac, B.M. Jović, V.D. Jović**

THE NON-NOBLE METAL COMPOSITES AS CATODES FOR HYDROGEN EVOLUTION: Ni-MoO_2 COATINGS
Institute for Multidisciplinary Reserach, Belgrade, Serbia

12^{15} - 12^{30} P. **Gautham, M. Winterer**
SPARK PLASMA SINTERING
Technische Institut Universitaet Darmstadt, Germany

12^{30} - 12^{45} **Anja Došen[1], Rossman Giese[2]**

THE ADVANTAGES OF THE THERMAL X-RAY DIFFRACTION: BRUSHITE EXAMPLE
[1]Department of material science, INS Vinca, Serbia,
[2]Geology Department, State University of New York at Buffalo, USA

12^{45} - 13^{30} **Lunch break**

13^{30} - 14^{30} **Poster session (C1-C3)**

2. Ceramics Nanostructures

Chairman: **G. Branković, S. Bernik**

14^{30} - 15^{00} ***Invited lecture***

Vladimir Urbanovich
THE INVESTIGATIONS IN THE FIELD OF NANOSTRUCTURED BULK MATERIALS BASED ON HIGH-MELTING POINT COMPOUNDS OBTAINED BY HIGH PRESSURE SINTERING
Scientific-Practical Materials Research Centre NAS of Belarus, Minsk, Belarus

Oral presentations

15^{00} - 15^{15} **Sanja Milošević, Željka Rašković, Sandra Kurko, Ljiljana Matović, Nikola Cvjetićanin, Jasmina Grbović Novaković**
THE INFLUENCE OF VO_2 ON HYDROGEN DESORPTION PROPERTIES OF MgH_2
[1]Material science Laboratory, Vinča Institute of Nuclear Sciences, Serbia,
[2]Faculty of Physical Chemistry, University of Belgrade, Serbia

15^{15} - 15^{30} **Marko Radović, Zorana Dohčević-Mitrović, Aleksandar Golubović, Zoran V. Popović**
SPECTROSCOPIC ELLIPSOMETRY INVESTIGATION AND MODELING OF BAND GAP IN Fe DOPED CERIA NANOPARTICLES
Center for Solid State Physics and New Materials, Institute of Physics, Belgrade, Serbia

15^{30} – 15^{45} **Lidija Mancic, Katarina Marinkovic, Ivan Dugandzic, Vesna Lojpur, Olivera Milosevic**
SOFT CHEMISTRY ROUTES FOR SYNTHESIS OF 3D AND 1D NANOSTRUCTURES
Institute of Technical Science of Serbian Academy of Sciences and Arts, Serbia

15^{45} - 16^{00} **Coffee break**

3. Structural Ceramics and Bioceramics

Chairman: **T. Volkov-Husović, B. Babić**

16^{00} - 16^{30} ***Invited lecture***

Krzysztof Haberko, Radoslaw Lach
CERAMIC MATRIX COMPOSITES IN ALUMINA AND YAG SYSTEM- PREPARATION AND PROPERTIES
Department of Special Ceramics, AGH University of Science and Technology, Krakow, Poland

Oral presentations

16^{30} - 16^{45} **Marijana Majić, Lidija Ćurković**
FRACTURE TOUGHNESS OF ALUMINA CERAMICS DETERMINED BY INDENTATION TECHNIQUE
Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb, Croatia

16^{45} - 17^{00} **Dusan Bucevac, Biljana Babic, Snezana Boskovic**
EFFECT OF HEAT TREATMENT ON MECHANICAL PROPERTIES OF SiC-TiB_2 COMPOSITES
Department of material science, INS Vinca, Serbia

17^{00} - 17^{15} **Ivan Djordjevic[1], Namita Roy Choudhury[2], Naba Dutta[2], Sunil Kumar[2], Endre Szili [3], David Steele[3]**
BIODEGRADABLE CITRIC-ACID BASED POLYESTER ELASTOMERS FOR TISSUE ENGINEERING APPLICATIONS
[1]Institute for Multidisciplinary Research, University of Belgrade,
[2]Ian Wark Research Institute, University of South Australia,
[3]Mawson Institute, University of South Australia

FRIDAY, 18.03.2011, NEW BELGRADE MUNICIPAL HALL

8^{00} - 9^{00} **REGISTRATION**

Chairman: **Z. Popović, K. Haberko**

9^{00} - 9^{45} ***Plenary lecture***

J.C. Schoen, A. Hanneman, M. Jansen
MODELING STRUCTURE AND PROPERTIES OF AMORPHOUS SILICON BORON NITRIDE CERAMICS
Max-Planck Institute for Solid State Research, Struttgart, Germany

4. Theoretical Modelling

Chairman: **Z. Popović, K. Haberko**

Oral presentations

9^{45} – 10^{00} **D.Zagorac, J.C. Schön, I. Pentin, M. Jansen**
STRUCTURE PREDICTION AND ENERGY LANDSCAPE EXPLORATION IN THE ZINC OXIDE SYSTEM
Max Planck Institute for Solid State Research, Stuttgart, Germany

10^{00}- 10^{15} **Radojka Vujasin[1], Milan Senćanski[2], Miljenko Perić[3]**
THEORETICAL INVESTIGATION OF THE STRUCTURE OF BC_2
[1]Department of Material Sciences, VINČA Institute of Nuclear Sciences, University of Belgrade, Belgrade, Serbia,
[2]Innovation center of the Faculty of Chemistry, University of Belgrade, Belgrade, Serbia,
[3]Faculty of Physical Chemistry, University of Belgrade, Belgrade, Serbia

10^{15} – 10^{30} **Igor Stankovic[1], Aleksandar Belic[1], Milan Zezelj[1], Aleksandar Golubovic[2], Maja Scepanovic[2]**
MODELING OF AGGLOMERATION DYNAMICS OF NANO-PARTICLE SUSPENSIONS
[1]Scientific Computing Laboratory, Institute of Physics, University of Belgrade, Belgrade, Serbia
[2]Center for Solid State Physics and New Materials, Institute of Physics, University of Belgrade, Belgrade, Serbia

10^{30} – 10^{45} **Coffee break**

5. Electroceramics and Solid Oxide Fuel Cells

Chairman: **B. Stojanović, M. Kosec**

10^{45} – 11^{15} ***Invited lecture***

Bernik Slavko[1,2],Matejka Podlogar,[1,2] Nina Daneu[1,2], Aleksandar Recnik[1,2]
LOW-DOPED ZnO-BASED VARISTOR CERAMICS WITH BROAD RANGE OF BREAK-DOWN VOLTAGES
[1]Jozef Stefan Institute, Ljubljana, Slovenia,
[2]Center of Excellence NAMASTE, Ljubljana, Slovenia

11^{15} – 11^{45} ***Invited lecture***

Victor Fruth[1], Eniko Volceanov[2], Cristian Andronescu[1], Rares Scurtu[1], Silviu Preda[1], Zorana Dohcevic-Mitrovic[3], Zoran Popovic[3]
PREPARATION AND CHARACTERIZATION OF DOPED LANTHANUM GALLATE (LSGM) ELECTROLYTE IN ACTIVATED MICROWAVE FIELD
[1]Institute of Physical Chemistry Ilie Murgulescu, Bucharest Romania,
[2]Metallurgical research Institute, ICEM SA Bucharest, Romania,
[3]Institute of Physics, Center for Solid State Physics and New Materials, Belgrade, Serbia

Oral presentations

$11^{45} – 12^{00}$ **Milan Zunic[1], Aleksandar Radojkovic[1], Zorica Brankovic[1], Goran Brankovic[1]**
SYNTHESIS AND CHARACTERIZATION OF ANODIC SUBSTRATES FOR IT-SOFCs BASED ON PROTON CONDUCTORS
[1]Institute for Multidisciplinary Research, Belgrade, Serbia

$12^{00} – 12^{15}$ **G. Branković[1], Z. Marinković Stanojević[1], Z. Jagličić[2], M. Jagodič[2], L. Mančić[3], A. Rečnik[4], Z. Branković[1]**
MECHANOCHEMICAL SYNTHESIS OF PURE AND DOPED BISMUTH MANGANITE MULTIFERROICS
[1]Institute for Multidisciplinary Research, Belgrade, Serbia
[2]Institute of Mathematics, Physics and Mechanics, Ljubljana, Slovenia
[3]Institute of Technical Sciences SASA, Belgrade, Serbia
[4]Jozef Stefan Institute, Ljubljana, Slovenia

$12^{15} – 12^{30}$ **Matejka Podlogar[1,2], Jacob J. Richardson[3], Nina Daneu[1,2], Aleksander Rečnik[1,2], Damjan Vengust[1], Slavko Bernik[1,2]**
LOW-TEMPERTATURE AQUEOUS SYNTHESIS AND CHARACTERISTICS OF TRANSPARENT ZINC OXIDE FILMS ON GLASS SUBSTRATE
[1]Jožef Stefan Institute, Ljubljana, Slovenia,
[2]Center of Excellence NAMASTE, Ljubljana, Slovenia,
[3]Materials Department, University of California, Santa Barbara, USA

$12^{30} – 12^{45}$ **Coffee break**

6. Silicates, Refractories, Cements and Traditional Ceramics

Chairman: **M. Komljenović, B. Matović**

Oral presentations

$12^{45} – 13^{00}$ **Z. Baščarević, Lj. Petrašinović-Stojkanović, M.Komljenović, N. Jovanović, V. Bradić**
APPLICATIONS OF FLY ASH AS A SECONDARY RAW MATERIAL FOR BUILDING MATERIALS PRODUCTION
Institut for Multidisciplinary Research, Belgrade, Serbia

$13^{00} – 13^{15}$ **Vesna Svoboda[1], Radmila Jančić-Heinemann[2], Suzana Polić-Radovanović[1]**
THE ROLE OF EXPERIMENTAL RESEARCH ON CERAMICS IN THE IDENTIFICATION OF INTANGIBLE CULTURAL HERITAGE
[1]Central Institute for conservation in Belgrade, Serbia,
[2]Faculty of Technology and Metallurgy, University of Belgrade, Serbia

$13^{15} – 13^{30}$ **Sanja Martinović[2], Milica Vlahović[2], Marija Dimitrijević[1], Marina Dojčinović[1], Aleksandar Devečerski[3], Branko Matović[3], Tatjana Volkov-Husović[1]**
PROPERTIES OF LOW CEMENT HIGH ALUMINA CASTABLE SINTERED AT 1300 °C
[1]University of Belgrade, Faculty of Technology and Metallurgy, Belgrade, Serbia,
[2]Institute for Technology of Nuclear and Other Raw Mineral Materials, Belgrade, Serbia,
[3]Insitute of Nuclear Science "Vinca", Material Science Laboratory, Belgrade, Serbia

$13^{30} – 13^{45}$ **Sanja Martinovic[2], Marija Dimitrijevic[1], Jelena Majstorovic[3], Branko Matovic[4], Tatjana Volkov-Husovic[1]**

MODELING OF STRENGTH DEGRADATION DURING THERMAL STABILITY TESTING OF LOW CEMENT HIGH ALUMINA CASTABLE

[1]University of Belgrade, Faculty of Technology and Metallurgy, Belgrade, Serbia,
[2]Institute of Nuclear and Other Raw Materials,Belgrade,Serbia,
[3]University of Belgrade, Faculty of Mining and Geology, Belgrade, Serbia,
[4]Institute of Nuclear Sciences Vinca, Materials Science Laboratory, Belgrade, Serbia

$13^{45} – 14^{15}$ **Lunch break**

$14^{15} – 15^{15}$ **Poster session (C4-C7)**

15^{00}- 18^{00} Students Speaking Contest

20^{30} **Conference dinner at "Zlatni bokal", Skadarlija**

RELAXOR BEHAVIOR OF $BaBi_4Ti_4O_{15}$

J.D.Bobić[1], M.M.Vijatović Petrović[1], S. Greičius[2], J. Banys[2], B.D.Stojanović[1]

[1]Institute for Multidisciplinary Research, University of Belgrade, Serbia
[2]Faculty of Physics, Vilnius University, Lithuania

Dense $BaBi_4Ti_4O_{15}$ ceramics were prepared by conventional solid state reaction from appropriate oxide mixture. Dielectric properties were investigated in a wide range of temperatures and frequencies. A modified Curie-Weiss relationship is used to study the diffuseness behavior of a ferroelectric phase transition. The dielectric relaxation rate follows the Vogel-Fulcher relation with $E_a = 0.013$ eV, $\nu_0 = 2.09 \times 10^8$ Hz and $T_f = 651$ K. Impedance investigations show only a single semicircle which can be ascribed to the grain component for all investigated temperatures. The calculated values of activation energy E_a is 1.02 eV.

THE CORRELATION BETWEEN THE INITIAL CERAMIC PARTICLES AND FINAL PRODUCTS

Milesa Srećković[1], Željka Tomić[2], Zoran Fidanovski[3], Stanko Ostojić[4], Predrag Jovanić[5], Ljubomir Vulićević[6],Aleksandar Bugarinović[7], Bojana Bokić[8]

[1] Faculty of Electrical Engineering, Belgrade, Serbia
[2] IRITEL A.D., Belgrade, Serbia
[3]School of computing, Union University, Belgrade, Serbia
[4]Faculty of Technology and Metallurgy, Belgrade, Serbia
[5]Institute for Multidisciplinary Research, Belgrade, Serbia
[6]Techical Faculty, Čačak, Serbia
[7]Telekom Srpske, Bjeljina, Bosnia and Hercegovina
[8]Institute of Physics, Belgrade, Serbia

The correlation between the initial ceramic particles and final products sintered from them depends on the schedule and type of sintering technology as well as from the initial conditions.

The distribution and description of particles obtained by various methods (including laser) can offer much, depending on the measuring techniques and data processing. By one definition, the description of particles is defined by 80 parameters, with each one having its importance dependent on further handling method.

In this paper, for chosen initial particles, obtained by several different techniques and material types, the analysis is performed and significant parameters are determined. Present and specifically developed steps are used.