

**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**

Publisher:

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

For Publisher:

Snežana Bošković

Jovan Nedeljković

Sonja Veljović-Jovanović

Aleksandar Belić

Editors:

Snežana Bošković

Zorica Branković

Jasmina Grbović Novaković

Technical editor:

Nikola Novaković

Design:

Nikola Novaković

**ISBN: 978-86-7306-107-8**

Print: "ALTA NOVA" Printing Comp.: 120 copies

Copyright © 2011 by The Serbian Ceramic Society and others contributors. All rights reserved. No part of this publication may be reproduced, in any form or by any means, without permission in writing from the publisher.

**Društvo za Keramičke Materijale Srbije  
Institut za nuklearne nauke Vinča, Univerzitet u Beogradu  
Institut za multidisciplinarna istraživanja, Univerzitet u  
Beogradu  
Institut za fiziku, Univerzitet u Beogradu**

**PROGRAM I KNJIGA APSTRAKATA  
Prva konferencija Društva za Keramičke  
Materijale Srbije  
17-18. Mart 2011, Beograd, Srbija  
1CSCS2011**

**Urednici:  
Snežana Bošković  
Zorica Branković  
Jasmina Grbović Novaković**

Izdavači:

Društvo za Keramičke Materijale Srbije

Institut za nuklearne nauke Vinča, Univerzitet u Beogradu

Institut za multidisciplinarna istraživanja, Univerzitet u Beogradu

Institut za fiziku, Univerzitet u Beogradu

za izdavača:

Snežana Bošković

Jovan Nedeljković

Sonja Veljović-Jovanović

Aleksandar Belić

Urednici:

Snežana Bošković

Zorica Branković

Jasmina Grbović Novaković

Tehnički urednik:

Nikola Novaković

Dizajn:

Nikola Novaković

Štampa: "ALTA NOVA"

Tiraž

120 primeraka

**ISBN: 978-86-7306-107-8**

## **ORGANISERS**

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

## **INTERNATIONAL ADVISORY BOARD**

### **Alida Bellosi**

ISTEC Faenza, Italy

### **Slavko Bernik**

Institut "Jožef Štefan" Ljubljana, Slovenia

### **José Francisco Fernández**

Universidad Autonoma de Madrid, Spain Madrid

### **Victor Fruth-Oprisan**

Institute of Physical Chemistry "I. G. Murgulescu" Romanian Academy

Bucharest, Romania

### **Marija Kosec**

Institut "Jožef Štefan" Ljubljana, Slovenia

### **Hasan Mandal**

Anadolu Üniversitesi Yunusemre Kampusu, Eskişehir, Turkey

### **Guenter Petzow**

Metallforschung Max-Planck Institut, Stuttgart, Germany

### **Aleksander Rečnik**

Institut "Jožef Štefan" Ljubljana, Slovenia

### **Pavol Sajgalik**

Institute of Inorganic Chemistry, Slovak Academy of Sciences, Bratislava,

Slovakia

### **J. Christian Schön**

FRSC Max-Planck Institute for Solid State Research, Stuttgart, Germany

### **Adrian Volceanov**

Faculty of Applied Chemistry and Materials Science, University

POLITEHNICA of Bucharest, Romania

### **Vladimir S. Urbanovic**

Scientific-Practical Materials Research Centre of the National Academy of

Sciences of Belarus, Minsk, Republic of Belarus

### **Krzysztof Haberko**

AGH University of Science and Technology, Krakow, Poland

## **SCIENTIFIC BOARD**

**Snežana Bošković, conference president**

Vinča Institute of Nuclear Sciences, University of Belgrade

**Goran Branković**

Institute for Multidisciplinary Research, University of Belgrade

**Zorica Branković**

Institute for Multidisciplinary Research, University of Belgrade

**Zorana Dohčević-Mitrović**

Institute of Physics, University of Belgrade

**Jasmina Grbović Novaković**

Vinča Institute of Nuclear Sciences, University of Belgrade

**Miroslav Komljenović**

Institute for Multidisciplinary Research, University of Belgrade

**Branko Matović**

Vinča Institute of Nuclear Sciences, University of Belgrade

**Ljubica Nikolić**

Faculty of Technology, University of Novi Sad

**Nikola Novaković**

Vinča Institute of Nuclear Sciences, Belgrade

**Zoran V. Popović**

Institute of Physics, University of Belgrade

**Jonjaua Ranogajec**

Faculty of Technology, University of Novi Sad

**Maja Šćepanović**

Institute of Physics, University of Belgrade

**Vladimir Srdić**

Faculty of Technology, University of Novi Sad

**Biljana Stojanović**

Institute for Multidisciplinary Research, University of Belgrade

**Tatjana Volkov Husović**

Faculty of Technology and Metallurgy, University of Belgrade

## **ORGANIZING BOARD**

**Biljana Babić**

Vinča Institute of Nuclear Sciences, University of Belgrade

**Željka Cvejić**

Faculty of Technology, University of Novi Sad

**Mirjana Grujić-Brojčin**

Institute of Physics, University of Belgrade

**Sandra Kurko**

Vinča Institute of Nuclear Sciences, University of Belgrade

**Milica Počuča-Nešić**

Institute for Multidisciplinary Research, University of Belgrade

**Željka Rašković**

Vinča Institute of Nuclear Sciences, University of Belgrade

**Maja Šćepanović**

Institute of Physics, University of Belgrade

**Mirjana Vijatović**

Institute for Multidisciplinary Research, University of Belgrade

**Milan Žunić**

Institute for Multidisciplinary Research, University of Belgrade

**PROGRAM:**

**THURSDAY, 17.03.2011. NEW BELGRADE MUNICIPAL HALL**

8<sup>00</sup>-9<sup>00</sup>            **REGISTRATION**

9<sup>00</sup> -9<sup>30</sup>            **OPENING CEREMONY**

9<sup>30</sup> - 10<sup>00</sup>            **COCKTAIL**

**Chairman: S. Bosković, Z. Dohčević-Mitrović**

10<sup>00</sup> - 10<sup>45</sup>            *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<sup>45</sup> - 11<sup>15</sup>            *Invited lecture*

**Aleksandar Rečnik<sup>1</sup>, Nina Daneu<sup>1</sup>, Thomas Walther<sup>2</sup>, Takashi Yamazaki<sup>3</sup>, Masahiro Kawasaki<sup>4</sup> and Werner Mader<sup>2</sup>**

**STRUCTURE AND CHEMISTRY OF BASAL-PLANE INVERSION BOUNDARIES IN Sb<sub>2</sub>O<sub>3</sub>-DOPED ZnO**

<sup>1</sup>Jozef Stefan Institute, Ljubljana, Slovenia,

<sup>2</sup>Anorg. Chemie, Univ. Bonn, Bonn, Germany,

<sup>3</sup>Depr. of Physics, Tokyo University of Science, Tokyo, Japan,  
<sup>4</sup>USA Incorporation, Peabody, Massachusetts, USA



**Oral presentations**

- 11<sup>15</sup> - 11<sup>30</sup>     **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<sup>30</sup> - 11<sup>45</sup>     **B.M. Jović, U. Lačnjevac, V.D. Jović**  
**THE NON-NOBLE METAL COMPOSITES AS CATODES FOR HYDROGEN EVOLUTION: Ni-MoO<sub>x</sub> COATINGS**  
Institute for Multidisciplinary Reserach, Belgrade, Serbia
- 11<sup>45</sup> - 12<sup>00</sup>     **Coffee break**
- Chairman:**     **V. Srdić, V. Urbanovich**
- 12<sup>00</sup> - 12<sup>15</sup>     **U. Lačnjevac, B.M. Jović, V.D. Jović**  
**THE NON-NOBLE METAL COMPOSITES AS CATODES FOR HYDROGEN EVOLUTION: Ni-MoO<sub>2</sub> COATINGS**  
Institute for Multidisciplinary Reserach, Belgrade, Serbia
- 12<sup>15</sup> - 12<sup>30</sup>     **P. Gautham, M. Winterer**  
**SPARK PLASMA SINTERING**  
Technische Institut Universitaet Darmstadt, Germany
- 12<sup>30</sup> - 12<sup>45</sup>     **Anja Došen<sup>1</sup>, Rossmann Giese<sup>2</sup>**  
**THE ADVANTAGES OF THE THERMAL X-RAY DIFFRACTION: BRUSHITE EXAMPLE**  
<sup>1</sup>Department of material science, INS Vinca, Serbia,  
<sup>2</sup>Geology Department, State University of New York at Buffalo, USA
- 12<sup>45</sup> - 13<sup>30</sup>     **Lunch break**
- 13<sup>30</sup> - 14<sup>30</sup>     **Poster session (C1-C3)**

## 2. Ceramics Nanostructures

Chairman: G. Branković, S. Bernik

14<sup>30</sup> - 15<sup>00</sup> *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<sup>00</sup> - 15<sup>15</sup>

**Sanja Milošević, Željka Rašković, Sandra Kurko, Ljiljana  
Matović, Nikola Cvjetičanin, Jasmina Grbović Novaković**  
**THE INFLUENCE OF VO<sub>2</sub> ON HYDROGEN  
DESORPTION PROPERTIES OF MgH<sub>2</sub>**

<sup>1</sup>Material science Laboratory, Vinča Institute of Nuclear  
Sciences, Serbia,

<sup>2</sup>Faculty of Physical Chemistry, University of Belgrade, Serbia

15<sup>15</sup> - 15<sup>30</sup>

**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<sup>30</sup> - 15<sup>45</sup>

**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<sup>45</sup> - 16<sup>00</sup>

**Coffee break**

### **3. Structural Ceramics and Bioceramics**

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

**16<sup>00</sup> - 16<sup>30</sup>** *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<sup>30</sup> - 16<sup>45</sup>** **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<sup>45</sup> - 17<sup>00</sup>** **Dusan Bucevac, Biljana Babic, Snezana Boskovic**  
**EFFECT OF HEAT TREATMENT ON MECHANICAL PROPERTIES OF SiC-TiB<sub>2</sub> COMPOSITES**  
Department of material science, INS Vinca, Serbia

**17<sup>00</sup> - 17<sup>15</sup>** **Ivan Djordjevic<sup>1</sup>, Namita Roy Choudhury<sup>2</sup>, Naba Dutta<sup>2</sup>, Sunil Kumar<sup>2</sup>, Endre Szili<sup>3</sup>, David Steele<sup>3</sup>**  
**BIODEGRADABLE CITRIC-ACID BASED POLYESTER ELASTOMERS FOR TISSUE ENGINEERING APPLICATIONS**

<sup>1</sup>Institute for Multidisciplinary Research, University of Belgrade,

<sup>2</sup>Ian Wark Research Institute, University of South Australia,

<sup>3</sup>Mawson Institute, University of South Australia

**FRIDAY, 18.03.2011, NEW BELGRADE MUNICIPAL HALL**

**8<sup>00</sup> - 9<sup>00</sup>            REGISTRATION**

**Chairman:        Z. Popović, K. Haberko**

**9<sup>00</sup> - 9<sup>45</sup>            *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, Stuttgart,  
Germany

**4. Theoretical Modelling**

**Chairman:        Z. Popović, K. Haberko**

*Oral presentations*

**9<sup>45</sup> – 10<sup>00</sup>            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<sup>00</sup> - 10<sup>15</sup>            Radojka Vujasin<sup>1</sup>, Milan Senćanski<sup>2</sup>, Miljenko Perić<sup>3</sup>**  
**THEORETICAL INVESTIGATION OF THE**  
**STRUCTURE OF BC<sub>2</sub>**  
<sup>1</sup>Department of Material Sciences, VINČA Institute of Nuclear  
Sciences, University of Belgrade, Belgrade, Serbia,  
<sup>2</sup>Innovation center of the Faculty of Chemistry, University of  
Belgrade, Belgrade, Serbia,  
<sup>3</sup>Faculty of Physical Chemistry, University of Belgrade,  
Belgrade, Serbia

10<sup>15</sup> – 10<sup>30</sup> **Igor Stankovic<sup>1</sup>, Aleksandar Belic<sup>1</sup>, Milan Zezelj<sup>1</sup>,  
Aleksandar Golubovic<sup>2</sup>, Maja Scepanovic<sup>2</sup>**

**MODELING OF AGGLOMERATION DYNAMICS OF  
NANO-PARTICLE SUSPENSIONS**

<sup>1</sup>Scientific Computing Laboratory, Institute of Physics,  
University of Belgrade, Belgrade, Serbia

<sup>2</sup>Center for Solid State Physics and New Materials, Institute of  
Physics, University of Belgrade, Belgrade, Serbia

10<sup>30</sup> – 10<sup>45</sup> **Coffee break**

## **5. Electroceramics and Solid Oxide Fuel Cells**

**Chairman: B. Stojanović, M. Kosec**

10<sup>45</sup> – 11<sup>15</sup> ***Invited lecture***

**Bernik Slavko<sup>1,2</sup>, Matejka Podlogar<sup>1,2</sup>, Nina Daneu<sup>1,2</sup>,  
Aleksandar Recnik<sup>1,2</sup>**

**LOW-DOPED ZnO-BASED VARISTOR CERAMICS  
WITH BROAD RANGE OF BREAK-DOWN VOLTAGES**

<sup>1</sup>Jozef Stefan Institute, Ljubljana, Slovenia,

<sup>2</sup>Center of Excellence NAMASTE, Ljubljana, Slovenia

11<sup>15</sup> – 11<sup>45</sup> ***Invited lecture***

**Victor Fruth<sup>1</sup>, Eniko Volceanov<sup>2</sup>, Cristian Andronesu<sup>1</sup>,  
Rares Scurtu<sup>1</sup>, Silviu Preda<sup>1</sup>, Zorana Dohcevic-Mitrovic<sup>3</sup>,  
Zoran Popovic<sup>3</sup>**

**PREPARATION AND CHARACTERIZATION OF  
DOPED LANTHANUM GALLATE (LSGM)  
ELECTROLYTE IN ACTIVATED MICROWAVE FIELD**

<sup>1</sup>Institute of Physical Chemistry Ilie Murgulescu, Bucharest  
Romania,

<sup>2</sup>Metallurgical research Institute, ICEM SA Bucharest, Romania,

<sup>3</sup>Institute of Physics, Center for Solid State Physics and New  
Materials, Belgrade, Serbia

**Oral presentations**

- 11<sup>45</sup> – 12<sup>00</sup>     **Milan Zunic<sup>1</sup>, Aleksandar Radojkovic<sup>1</sup>, Zorica Brankovic<sup>1</sup>, Goran Brankovic<sup>1</sup>**  
**SYNTHESIS AND CHARACTERIZATION OF ANODIC SUBSTRATES FOR IT-SOFCs BASED ON PROTON CONDUCTORS**  
<sup>1</sup>Institute for Multidisciplinary Research, Belgrade, Serbia
- 12<sup>00</sup> – 12<sup>15</sup>     **G. Branković<sup>1</sup>, Z. Marinković Stanojević<sup>1</sup>, Z. Jagličić<sup>2</sup>, M. Jagodič<sup>2</sup>, L. Mančić<sup>3</sup>, A. Rečnik<sup>4</sup>, Z. Branković<sup>1</sup>**  
**MECHANOCHEMICAL SYNTHESIS OF PURE AND DOPED BISMUTH MANGANITE MULTIFERROICS**  
<sup>1</sup>Institute for Multidisciplinary Research, Belgrade, Serbia  
<sup>2</sup>Institute of Mathematics, Physics and Mechanics, Ljubljana, Slovenia  
<sup>3</sup>Institute of Technical Sciences SASA, Belgrade, Serbia  
<sup>4</sup>Jozef Stefan Institute, Ljubljana, Slovenia
- 12<sup>15</sup> – 12<sup>30</sup>     **Matejka Podlogar<sup>1,2</sup>, Jacob J. Richardson<sup>3</sup>, Nina Daneu<sup>1,2</sup>, Aleksander Rečnik<sup>1,2</sup>, Damjan Vengust<sup>1</sup>, Slavko Bernik<sup>1,2</sup>**  
**LOW-TEMPERATURE AQUEOUS SYNTHESIS AND CHARACTERISTICS OF TRANSPARENT ZINC OXIDE FILMS ON GLASS SUBSTRATE**  
<sup>1</sup>Jožef Stefan Institute, Ljubljana, Slovenia,  
<sup>2</sup>Center of Excellence NAMASTE, Ljubljana, Slovenia,  
<sup>3</sup>Materials Department, University of California, Santa Barbara, USA
- 12<sup>30</sup> – 12<sup>45</sup>     **Coffee break**

## **6. Silicates, Refractories, Cements and Traditional Ceramics**

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

### *Oral presentations*

**12<sup>45</sup> – 13<sup>00</sup>**     **Z. Bašcarević, 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<sup>00</sup> – 13<sup>15</sup>**     **Vesna Svoboda<sup>1</sup>, Radmila Jančić-Heinemann<sup>2</sup>, Suzana Polić-Radovanović<sup>1</sup>**  
**THE ROLE OF EXPERIMENTAL RESEARCH ON CERAMICS IN THE IDENTIFICATION OF INTANGIBLE CULTURAL HERITAGE**  
<sup>1</sup>Central Institute for conservation in Belgrade, Serbia,  
<sup>2</sup>Faculty of Technology and Metallurgy, University of Belgrade, Serbia

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

13<sup>30</sup> – 13<sup>45</sup>

**Sanja Martinovic<sup>2</sup>, Marija Dimitrijevic<sup>1</sup>, Jelena Majstorovic<sup>3</sup>, Branko Matovic<sup>4</sup>, Tatjana Volkov-Husovic<sup>1</sup>**  
**MODELING OF STRENGTH DEGRADATION DURING THERMAL STABILITY TESTING OF LOW CEMENT HIGH ALUMINA CASTABLE**

<sup>1</sup>University of Belgrade, Faculty of Technology and Metallurgy, Belgrade, Serbia,

<sup>2</sup>Institute of Nuclear and Other Raw Materials, Belgrade, Serbia,

<sup>3</sup>University of Belgrade, Faculty of Mining and Geology, Belgrade, Serbia,

<sup>4</sup>Institute of Nuclear Sciences Vinca, Materials Science Laboratory, Belgrade, Serbia

13<sup>45</sup> – 14<sup>15</sup>

**Lunch break**

14<sup>15</sup> – 15<sup>15</sup>

**Poster session (C4-C7)**

15<sup>00</sup> - 18<sup>00</sup>

**Students Speaking Contest**

20<sup>30</sup>

**Conference dinner at “Zlatni bokal”, Skadarlija**



## RHEOLOGICAL PROPERTIES OF AQUEOUS $\text{Al}_2\text{O}_3$ SUSPENSIONS

Marijo Lalić, Marijana Majić, Lidija Ćurković, Sara Salopek

Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb, Croatia

The aim of the present work was to investigate rheological behavior of alumina suspensions, considering different amounts of polyvinyl alcohol as a binder. Three different aqueous suspensions were prepared, containing 60, 70 and 80 wt.% of alumina powder.

Spinel was added as a sintering agent and Darvan 821-A as a dispersant, in the amount of 0.08 and 0.4 wt.% of dry powder weight, respectively.

The alumina suspensions flow curves were recorded and fitted satisfactorily to the power law, Herschel-Bulkley and Bingham models.

Obtained results indicate that apparent viscosity of alumina suspensions increases with increasing  $\text{Al}_2\text{O}_3$  and polyvinyl alcohol amount.

## CHARACTERIZATION OF BARIUM BISMUTH TITANATE OBTAINED BY MECHANOCHEMICAL SYNTHESIS

Zorica Ž. Lazarević<sup>1</sup>, Jelena D. Bobić<sup>2</sup>,  
Nebojša Ž. Romčević<sup>1</sup>, Biljana D. Stojanović<sup>2</sup>

<sup>1</sup>Institute of Physics, University of Belgrade, Belgrade, Serbia

<sup>2</sup>The Institute for Multidisciplinary Research, Belgrade, Serbia

Barium bismuth titanate,  $\text{BaBi}_4\text{Ti}_4\text{O}_{15}$  (BBT) was prepared by homogenization and sintering of mixture of stoichiometric quantities of  $\text{BaTiO}_3$  and  $\text{Bi}_4\text{Ti}_3\text{O}_{12}$  obtained via mechanochemical synthesis. The reaction mechanism of  $\text{BaBi}_4\text{Ti}_4\text{O}_{15}$  formation and the characteristics of BBT powders and ceramics were studied using XRD, Raman spectroscopy and SEM. The results confirmed that  $\text{BaBi}_4\text{Ti}_4\text{O}_{15}$  was formed by tetragonal symmetry. Only 4 Raman modes are clearly observed.  $\text{Ba}^{2+}$  ions randomly occupy the Bi sites of a pseudo-perovskite layer and may enter in a bismuth oxide layer.  $\text{BaBi}_4\text{Ti}_4\text{O}_{15}$  ceramics possess the plate-like structure typical for layered structure materials.