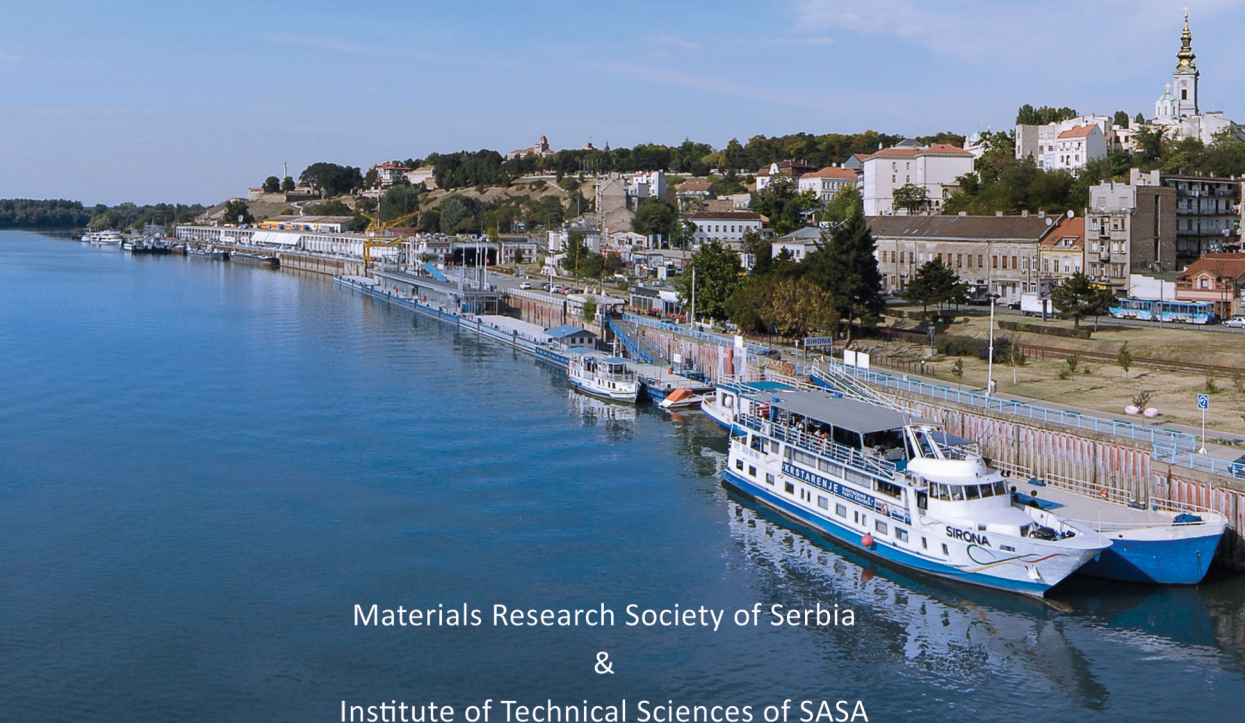
THIRTEENTH YOUNG RESEARCHERS' CONFERENCE
MATERIALS SCIENCE AND ENGINEERING

December 10-12, 2014, Belgrade, Serbia

Serbian Academy of Sciences and Arts, Knez Mihailova 36

PROGRAMME & THE BOOK OF ABSTRACTS



Materials Research Society of Serbia

&

Institute of Technical Sciences of SASA

December 2014, Belgrade, Serbia

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Program and the Book of Abstracts

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&
Institute of Technical Sciences of SASA

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Aim of the Conference

Main aim of the conference is to enable young researchers (post-graduate, master or doctoral student, or a PhD holder younger than 35) working in the field of materials science and engineering, to meet their colleagues and exchange experiences about their research.

Topics

New synthesis and processing methods
Materials for high-technology applications
Theoretical modelling of materials
Nanostructured materials
Biomaterials

Scientific and Organizing Committee

Conference Secretary
Aleksandra Stojičić Institute of Technical Sciences of SASA, Belgrade, Serbia

Conference Technical Committee

Milica Ševkušić, Zoran Stojanović, Miodrag Lukić, Ana Stanković, Maja Kuzmanović, Nenad Filipović, Miloš Milović, Ljiljana Veselinović

Results of the Conference

Beside printed «Program and the Book of Abstracts», which is disseminated to all conference participants, selected and awarded peer-reviewed papers will be published in journals "Tehnika – Novi Materijali" and "Processing and Application of Ceramics". The best presented papers, suggested by Session Chairpersons and selected by Awards Committee, will be proclaimed at the Closing Ceremony.

Sponsors

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Meet the recipients of 12YRC 2013 awards

Jovana Zvicer, PhD student at Faculty of Technology and Metallurgy, University of Belgrade, Belgrade, Serbia**,** presented "Cytotoxicity of Ag/alginate nanocomposites: *in vitro* and *in vivo* studies", by Jovana Zvicer, Lenart Girandon, Urška Potočar, Mirjam Fröhlich, Ivan Jančić, Biljana Bufan, Marina Milenković, Jasmina Stojkovska, Vesna Mišković-Stanković, Bojana Obradović. Ms. Zvicer finished academic and master studies and in 2011 enrolled PhD studies and began her research career at the Faculty of Technology and Metallurgy, University of Belgrade. During recent years she has participating in various national and international projects, including Eureka and Cost Action projects. She presented result of her studies in many conferences, including 9YRC 2010, TERMIS 2012, NanoBelgrade 2013, 12YRC 2013, TERMIS 2014, YUCOMAT 2014. Her major fields of interests are tissue engineering, bioreactor cultivations, cytotoxicity studies in different systems and development of novel biomaterials.

Dr. Marko V. Lubarda, assistant professor at the Faculty of Polytechnics, University of Donja Gorica, Podgorica, Montenegro, presented "Advanced computational methodologies for modeling realistic polycrystalline magnetic films and devices". Dr. Lubarda finished his BSc studies of physics in 2006 at a Department of Physics, University of California in San Diego, and MSc (in 2007) and PhD (in 2012) studies of materials science and engineering at the same university in their Materials Science and Engineering Program. His research area is computational micromagnetics and device physics. He is a recipient of 7 honours and awards: Elected member of the *Center for Young Scientists* of the *Montenegrin Academy of Sciences and Arts* (March 2014); The 2013 Young Researcher Award from the Montenegrin Academy of Sciences and Arts (December, 2013); The Montenegrin Ministry of Science Annual Award for the Most Outstanding Scientist in Montenegro Under the Age of 35 (December, 2013); Award from the MRS- Serbia for the work on polycrystalline magnetic films and devices presented at 12YRC 2013, held in Belgrade from December 11-13, 2013; Article *APL*, 99, 13 (2011) selected for publication by the American Institute of Physics and the American Physical Society in corporation with other societies and publishers in the October 10, 2011 issue of *Virtual Journal of Nanoscale Science & Technology*; Travel award for the 2010 IEEE Magnetics Society Summer School in Dresden, Germany (2010) - 11th Joint MMM/Intermag Conference, Washington DC, student travel grant recipient (2010). He participated in 16 research projects and 5 research workshops. Until now, Dr. Lubarda presented results of his studies at 26 conferences and published 11 papers in peer-reviewed journals.

Ivana Jevremović, PhD student at the Faculty of Technology and Metallurgy, University of Belgrade, Belgrade, Serbia, presented "Use of quartz crystal microbalance (QCM) measurements to investigate novel top-of-the-line corrosion (TLC) mitigation method", by Ivana Jevremović, Feranando Farelas, Marc Singer, Srdjan Nešić, Vesna Mišković-Stanković. Ms. Jevremović finished her MSc studies in chemical engineering at the Department of Physical Chemistry and Electrochemistry, Faculty of Technology and Metallurgy, University of Belgrade in 2010 and enrolled the PhD studies at the same Faculty. She works as a Research Assistant at the Inovation center of the Faculty of Technology and

Metallurgy, University of Belgrade. She was on a 10 months internship as a research scholar at Institute for Corrosion and Multiphase Technology, Ohio University, where she performed the research related to her PhD thesis on the corrosion inhibition of carbon steel in CO_2 environment. She won the third prize in the category of Harvey Herro Applied corrosion technology within NACE student poster sessions for a poster titled " Top-of-the-line corrosion (TLC) mitigation of mild steel in CO_2 environment using corrosion inhibitor injected within a Foam Carrier in Salt Lake City, USA (2012). She was awarded by Serbian Chemical Society for the overall achievement during B.Sc. studies. Her research interest is particularly focused on the corrosion inhibition of mild steel in CO_2 environment. She is a member of the Serbian Chemical Society and the American Association of Engineers Corrosion (National Association of Corrosion Engineers, NACE). She has published 5 papers in peer-reviewed journals and 18 in conference proceedings.

Dr. Rafał Poręba from the Institute of Macromolecular Chemistry AS CR, v.v.i., Prague, Czech Republic, presented "Preparation and characterization of waterborne polyurethane dispersions and films", by Rafał Poręba, Magdalena Serkis and Milena Špírková. Dr. Poręba finished MSc studies in 2009 at the Rzeszow University of Technology, Faculty of Chemistry, Poland, and PhD studies in 2014 at The Institute of Chemical Technology, Faculty of Chemical Technology, Prague, Czech Republic. He works at the Institute of Macromolecular Chemistry Academy of Sciences of the Czech Republic in Prague, Department of Nanostructured Polymers and Composites. He participated at 12 international conferences and is a recipient of 4 awards: best presentation at 12YRC 2013, Dean's Award in recognition of popularization of the Faculty of Chemistry among the youth through organization and leading of chemical shows for secondary school students in 2008, and the annual Rector's Award in acknowledgement of scientific and organizational work in 2007 and 2008.

Violeta Nikolić, PhD student and Postgraduate Research Fellow at the Vinča Institute, Condensed Matter Physics Laboratory, University of Belgrade, Belgrade, Serbia, presented "Spin glass like behaviour of magnetite nanoparticle system obtained by thermal decomposition of acetylacetonate precursor", by Violeta Nikolić, Vojislav Spasojević, Vladan Kusigerski, Marija Perović, Ana Mraković, Marko Bosković, Jovan Blanuša. Ms. Nikolić finished her BSc and MSc studies in 2010 and 2011, respectively, at the Faculty of Physical Chemistry, University of Belgrade. She is a member of Society of Physical Chemists of Serbia and Materials Research Society of Serbia and participated at IV International Scientific Conference *Contemporary Materials 2011* – Banja Luka, 12YRC 2013 and YUCOMAT 2014. She participates at the following teams and projects: 2011-2014. – Project: **"**Magnetic and with radionuclides marked nanostructured materials applicable in medicine"; part of the VINCENT Center of Excellence (National R&D Centre of Excellence for Knowledge-based multifunctional materials; a part of the VINCA Institute); FP7-ERA Chairs project – **"**Strengthening of the MagBioVin Research and Innovation Team for Development of Novel Approaches for Tumour Therapy based on Nanostructured Materials".

Programme
Thirteenth Young Researchers Conference
Materials Science and Engineering

Wednesday, December 10, 2014

08.30 Registration

09.00 – 10.00 Opening Ceremony of the Thirteenth Young Researchers Conference – Materials Science and Engineering
Dr. Smilja Marković, President of the Programming and Organizing Committee
Prof. Dr. Dragan Uskoković, President of the Materials Research Society of Serbia
Academician Zoran Djurić, Director of the Institute of Technical Sciences of SASA
12th YRC 2013 Awards

10.00 – 11.30 1st Session – Biomaterials I
Chairpersons: Dr. Magdalena Stevanović and Marija Babić

10.00 – 10.15 Polymeric matrices based on 2-hydroxyethyl acrylate and itaconic acid for controlled drug release
Marija M. Babić, Bojan Dj. Božić, Katarina M. Antić, Jovana S. Jovašević Vuković, Marija D. Perišić, Jovanka M. Filipović, Simonida Lj. Tomić
Faculty of Technology and Metallurgy, University of Belgrade, Belgrade, Serbia

10.15 – 10.30 Mesoporous silica nanoparticles and their application in drug delivery
Sanja Milenković[1], Nikola Knežević[1,2], Aleksandar Djordjević[1], Danica Jović[1], Ivana Borišev[1]
[1]Department of Chemistry, Biochemistry and Environmental Protection, Faculty of Science, University of Novi Sad, Trg Dositeja Obradovića 3, 21000 Novi Sad, Serbia, [2]European University-Faculty of Pharmacy, Trg mladenaca 5, 21000 Novi Sad, Serbia

10.30 – 10.45 Effect of a molecular weight on the release process from alginate microbeads

Jovana M. Ilić[1], Aleksandar S. Grujić[1], Mirko Z. Stijepović[1], Jasna T. Stajić-Trošić[1], Branko M. Bugarski[2]

[1]University of Belgrade, Institute of Chemistry, Technology and Metallurgy, Njegoševa 12, 11000 Belgrade, Serbia, [2]University of Belgrade, Faculty of Technology and Metallurgy, Karnegijeva 4, 11000 Belgrade, Serbia

10.45 – 11.00 Solid state characterization of maltose-embedded hemoglobin from porcine slaughterhouse blood

Katarina S. Bukara[1], Ivana T. Kostić[1], Vesna Lj. Ilić[2], Smilja B. Marković[3], Nenad Ž. Lazarević[4], Branko M. Bugarski[1]

[1]Department of Chemical Engineering, Faculty of Technology and Metallurgy, University of Belgrade, Karnegijeva 4, 11060 Belgrade, Serbia, [2]Institute for Medical Research, University of Belgrade, Dr Subotica 4 POB 39, 11129 Belgrade 102, Serbia, [3]Institute of Technical Sciences of SASA, Knez Mihailova 35/IV P.O. BOX 377, 11000 Belgrade, Serbia, [4]Institute of Physics, University of Belgrade, Pregrevica 118, 11080 Zemun, Belgrade, Serbia

11.00 – 11.15 Influence of whey proteins addition on mechanical stability of biopolymer beads with immobilized probiotics

Nataša Obradović[1], Tanja Krunić[1], Ivana Damnjanović[1], Ana Jenić[2], Marica Rakin[2], Marko Rakin[2], Branko Bugarski[2]

[1]University of Belgrade, Innovation Centre of the Faculty of Technology and Metallurgy, Karnegijeva 4, 11120 Belgrade, Serbia, [2]University of Belgrade, Faculty of Technology and Metallurgy, Karnegijeva 4, 11120 Belgrade, Serbia

11.15 – 11.30 Optimization of chitosan gel preparation for supercritical impregnation of thymol

Stoja Milovanović[1], Milica Pantić[2], Jasna Ivanović[1], Irena Žižović[1]

[1]University of Belgrade, Faculty of Technology and Metallurgy, Karnegijeva 4, 11000 Belgrade, Serbia, [2]University of Maribor, Faculty of Chemistry and Chemical Engineering, Smetenova ulica 17, 2000 Maribor, Slovenia

11.30 – 11.45 Break

11.45 – 13.30 2nd Session – Biomaterials II
Chairpersons: Prof. Dr. Nenad Ignjatović and Dr. Sanja Eraković

11.45 – 12.00 Effect of surface modification on corrosion behavior of Mg-based implants

Aydin Tahmasebifar[1], Said Murat Kayhan[1], Muammer Koç[2], Zafer Evis[1]
[1]Middle East Technical University, Dept. of Engineering Sciences, Ankara, 06800, Turkey, [2]Istanbul Sehir University, Dept. of Industrial and System Engineering, Istanbul, 34660, Turkey

12.00 – 12.15 Mechanical properties of micro-scale porous surfaces for Mg-based implants

Said Murat Kayhan[1], Aydin Tahmasebifar[1], Zafer Evis[1], Muammer Koç[2]
[1]Middle East Technical University, Dept. of Engineering Sciences, Ankara, 06800, Turkey, [2]Istanbul Şehir University, Dept. of Industrial and System Engineering, Istanbul, 34660, Turkey

12.15 – 12.30 Plasma surface modification of chitosan films to control biocompatibility

Tatiana S. Demina[1], M.G. Drozdova[2], M.Yu. Yablokov[1], A.B. Gilman[1], T.A. Akopova[1], E.A. Markvicheva[2], A.N. Zelenetskii[1]
[1]Enikolopov Institute of Synthetic Polymer Materials RAS, Moscow, Russia, [2]Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry RAS, Moscow, Russia

12.30 – 12.45 Hemolytic, antimicrobial and histological analysis of nanocomposite biomaterials based on HAp and polymers

Zorica Ajduković[1], Nenad Petrović[2], Nenad Ignjatović[3], Tatjana Mihajilov-Krstev[4], Jelena Rajković[4], Dragana Kenic Marinković[5], Dragan Uskoković[3]
[1]University of Niš, Faculty of Medicine, Clinic of Stomatology, Department of Prosthodontics, Bulevar Zorana Djindjića 81, 18000 Niš, Serbia, [2]University of Niš, Faculty of Medicine, Department of Dentstry, Bulevar Zorana Djindjića 81, 18000 Niš, Serbia, [3]Institute of Technical Sciences of SASA, Knez Mihailova 35/IV, PO Box 377, 11000 Belgrade, Serbia, [4]University of Niš, Faculty of Science and Mathematics, Department of Biology and Ecology, Višegradska 33, P. O. Box 224, 18000 Niš, Serbia, [5]Private dental practice "Kalodent" Niš, Pasterova 15, 18 000 Niš, Serbia

12.45 – 13.00 Electrophoretic hybrid hydroxyapatite/graphene coatings on titanium

Sanja Eraković[1], Ana Janković[1], Miodrag Mitrić[2], Ivana Z. Matić[3], Zorica D. Juranić[3], Gary C.P. Tsui[4], Chak-yin Tang[4], Vesna Mišković-Stanković[1], Kyong Yop Rhee[5], Soo Jin Park[6]
[1]Faculty of Technology and Metallurgy, University of Belgrade, Belgrade, Serbia, [2]Vinča Institute of Nuclear Sciences, University of Belgrade, Belgrade, Serbia, [3]Institute of Oncology and Radiology of Serbia, Belgrade, Serbia, [4]Department of Industrial and Systems Engineering, The Hong Kong

Polytechnic University, Hung Hom, Kowloon, Hong Kong, PR China, [5]Department of Mechanical Engineering, Kyung Hee University, Yongin, Korea, [6]Chemistry, Collage of Natural Sciences, Inha University, Incheon, Korea

13.00 – 13.15 Processing and properties of bioceramic materials based on hydroxyapatite doped with ions of magnesium and copper
Tanja Stamenić, Djordje Veljović, Rada Petrović, Djordje Janaćković
Faculty of Technology and Metallurgy, University of Belgrade, Karnegijeva 4, Belgrade, Serbia

13.15 – 13.30 Sintered bioactive glass-ceramics prepared from strontium containing polyphosphate glass
Vladimir S. Topalović[1], V.D. Živanović[1], S.D. Matijašević[1], J.D. Nikolić[1], S.R. Grujić[2], S.V. Smiljanić[2], S.N. Zildžović[1]
[1]Institute for the Technology of Nuclear and other Mineral Raw Materials, 86 Franchet d'Esperey St., 11000 Belgrade, Serbia, [2]Faculty of Technology and Metallurgy, University of Belgrade, Karnegijeva 4, 11000 Belgrade, Serbia

13.30 – 13.45 Break

13.45 – 15.15 3rd Session – Biomaterials III
Chairpersons: Dr. Djordje Veljović and Jovana Jovašević

13.45 – 14.00 Early fracture healing in ovariectomized rats femur helped with alfacalcidol and platelet-rich plasma on bio-oss carrier
Jelena Rajković[1], Stevo Najman[2], Sanja Stojanović[2], Ljubiša Djordjević[1], Vladimir Cvetković[1], Zorica Ajduković[3]
[1]University of Niš, Faculty of Science and Mathematics, Department of Biology and Ecology, Niš, Serbia; [2]University of Niš, Faculty of Medicine, Department for Cell and Tissue Engineering; Institute of Biology and Human Genetics, Niš, Serbia; [3]University of Niš, Faculty of Medicine, Clinic of Stomatology, Department of Prosthodontics, Niš, Serbia

14.00 – 14.15 Fabrication and characterization of electrospun PCL/PHBHHx fibers
Giulia Rella[1], Ranjana Rai[1], Marwa Tallawi[1], Judith E. Roether[2], Joachim Kaschta[2], Dirk W. Schubert[2], Aldo R. Boccaccini[1]
[1]Institute of Biomaterials, Department of Materials Science and Engineering, University of Erlangen-Nuremberg, Cauerstr. 6, 91058 Erlangen, Germany, [2]Institute of Polymer Materials, Department of Materials Science and

Engineering, University of Erlangen-Nuremberg, Martensstr. 7, 91058 Erlangen, Germany

14.15 – 14.30 Antibacterial activity of a new clay-TiO_2 nanocomposits on gram positive and gram-negative bacteria
Amir Lashgari, Shahriar Ghamami
Department of Chemistry, Faculty of Science, Imam Khomeini International University, Qazvin, Iran

14.30 – 14.45 Synthesis, characterization, anti-tumor and antibacterial activities study of nano leaf CuO
Shahriar Ghamami, Amir Lashgari
Department of Chemistry, Faculty of Science, Imam Khomeini International University, Qazvin, Iran

14.45 – 15.00 Evaluation of genotoxicity of (meth)acrylate polymers in HeLa cells by using alkaline comet assay
Dijana Takić Miladinov[1], Jelena Najdanović[2], Dragana Tričković-Vukić[2], Sanja Stojanović[2], Simonida Tomić[3], Perica Vasiljević[1], Stevo Najman[2]
[1]University of Niš, Faculty of Science and Mathematics, Department of Biology and Ecology, Niš, Serbia; [2]University of Niš, Faculty of Medicine, Institute of Biology and Human Genetics, Niš, Serbia; [3]University of Belgrade, Faculty of Technology and Metallurgy, Belgrade, Serbia

15.00 – 15.15 Structural, release and antibacterial properties of pH sensitive hydrogels based on 2-hydroxyethyl acrylate and itaconic acid with incorporated copper(II) ions
Jovana S. Jovašević Vuković, Marija M. Babić, Katarina M. Antić, Marija D. Perišić, Jovanka M. Filipović, Simonida Lj. Tomić
Faculty of Technology and Metallurgy, University of Belgrade, Belgrade, Serbia

15.15 – 16.15 Lunch Break with refreshments

16.15 – 18.00 4th Session – Nanomaterials: Synthesis and characterization
Chairpersons: Dr. Dragana Jugović and Dr. Bjorn Eckhardt

16.15 – 16.30 Investigation of Fe_3O_4@cyanuric chloride supermagnetice nanoparticles effects on physical properties of flexible polyurethane foam nanocomposites
Mir Mohammad Alavi Nikje, Seideh Leila Rahmani Andabil and Lida Sarchami

Department of Chemistry, Faculty of Science, Imam Khomeini International University, Qazvin, Iran

16.30 – 16.45 Preparation and characterization of polyurethane rigid foam nanocomposites by incorporation of magnetic core-shell Fe_3O_4@APTS/ 2-Chloropyridine nanoparticles

Mir Mohammad Alavi Nikje, Lida Sarchami and Seideh Leila Rahmani Andabil
Department of Chemistry, Faculty of Science, Imam Khomeini International University, Qazvin, Iran

16.45 – 17.00 The synthesis of micelle-templated mesoporous metal carbonates and metal oxides

Björn Eckhardt, Erik Ortel, Ralph Kraehnert
Technical University of Berlin, Berlin, Germany

17.00 – 17.15 The influence of synthesis parameters on physicochemical properties of hydrothermally/solvothermally derived cobalt ferrite nanoparticles

Sonja Jovanović[1], Matjaž Spreitzer[2], Danilo Suvorov[2]
[1]Laboratory of Physics, Vinča Institute of Nuclear Sciences, University of Belgrade, Belgrade, Serbia, [2]Advanced Materials Department, Jožef Stefan Institute, Ljubljana, Slovenia

17.15 – 17.30 Fullerene C_{60} dimer oxides

Igor Medić, Aleksandar Djordjević, Ivana Borišev, Danica Jović
Department of Chemistry, Biochemistry and Environmental Protection, Faculty of Science, University of Novi Sad, Trg D. Obradovića 3, 21000 Novi Sad, Serbia

17.30 – 17.45 Photocatalytic behavior of nanostructured systems based on Ag&ZnO synthesized by solvothermal method

Lidia Muñoz[1], A. Sierra-Fernández[1,2], L.S. Gómez-Villalba[2], O. Milošević[3], M.E. Rabanal[1]
[1]University Carlos III of Madrid and IAAB, Department of Materials Science and Engineering and Chemical Engineering, Avda. Universidad 30, 28911 Leganes, Madrid, Spain, [2]Instituto de Geociencias (CSIC, UCM), C/ José Antonio Novais 2, 28040 Madrid, Spain, [3]Institute of Technical Sciences of SASA, Knez Mihailova 35/IV, 11000 Belgrade, Serbia

17.45 – 18.00 Release profiles of a new quinolone derivative from mesoporous silica materials

Mihaela Deaconu[1,2], Lucia Pintilie[2], Dragoş Gudovan[1], Dan Mihaiescu[1]
[1]University "Politehnica" of Bucharest, Faculty of Applied Chemistry and Materials Science, 1-7 Gh Polizu Street, 011061 Bucharest, Romania,

[2]National Institute for Chemical-Pharmaceutical Research and Development, 112 Vitan Av., 031299 Bucharest, Romania

Thursday, December 11, 2014

09.00 – 10.45 5th Session – Theoretical Modelling of Materials I
Chairpersons: Dr. Željka Nikitović and Dr. Siniša Vučenović

09.00 – 09.15 Helically coiled carbon nanotubes as nanomechanical oscillators
Zoran P. Popović, Milan Damnjanović, Ivanka Milošević
Faculty of Physics, University of Belgrade, 11001 Belgrade, Serbia

09.15 – 09.30 Electronic nature of the low-temperature anomalies of specific heat in carbon nanotubes
Alexander Ponomarev[1], Valery Egorushkin[1], Natalia Melnikova[2], Nadezhda Bobenko[1]
[1]Institute of Strength Physics and Materials Science Siberian Branch of Russian Academy of Sciences, Tomsk 634021, Russia, [2]V.D. Kuznetsov Siberian Physical Technical Institute of Tomsk State University, Tomsk 634050, Russia

09.30 – 09.45 Carbon nanotubes based active area of field effect transistors – basic analytical models
Nikola V. Stojiljković[1], Petar M. Lukić[1], Vladan M. Lukić[1], Rajko M. Šašić[2]
[1]Faculty of Mechanical Engineering, University of Belgrade, Kraljice Marije 16, 11120 Belgrade, Serbia, [2]Faculty of Technology and Metallurgy, University of Belgrade, Karnegijeva 4, 11120 Belgrade

09.45 – 10.00 Investigation of Risken–Nummedal–Graham–Haken instabilities in quantum cascade lasers
Nikola Vuković[1], Jelena Radovanović[1], Vitomir Milanović[1], Dmitri L. Boiko[2]
[1]School of Electrical Engineering, University of Belgrade, RS-11120, Belgrade, Serbia, [2]Centre Suisse d'Electronique et de Microtechnique SA, 2002, Neuchâtel, Switzerland

10.00 – 10.15 First principle calculation of phonons and electron-phonon interaction in graphene
Jelena Pešić, Vladimir Damljanović, Radoš Gajić
Graphene laboratory, Center for Solid State Physics and New Materials, Institute of Physics, University of Belgrade, Pregrevica 118, 11080 Belgrade

10.15 – 10.30 Wake effect in the interaction of slow correlated charges with supported graphene due to plasmon-phonon hybridization

Tijana Marinković[1], Ivan Radović[1], Duško Borka[1], Zoran L. Mišković[2]
[1]VINČA Institute of Nuclear Sciences, University of Belgrade, P.O. Box 522, 11001 Belgrade, Serbia, [2]Department of Applied Mathematics, and Waterloo Institute for Nanotechnology, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1

10.30 – 10.45 Analytical and computational modeling for the study of magnetization response in nanoscale heterostructures envisioned for coming generation memory and processing applications

Marko V. Lubarda[1], Majd Kuteifan[2], Sidi Fu[2], Ruinan Chang[2], Marco A. Escobar[2], Stephane Mangin[3], Eric E. Fullerton[2], Vitaliy Lomakin[2]
[1]Faculty of Polytechnics, University of Donja Gorica, 81000 Podgorica, Montenegro, [2]Center for Magnetic Recording Research, University of San Diego, California, USA, [3]Institut Jean Lamour, Université de Lorrain, Vandoeuvre-Les-Nancy, France

10.45 - 11.15 Break

11.15 – 12.45 6th Session – Theoretical Modelling of Materials II
Chairpersons: Dr. Boban Stojanović and Zoran Popović

11.15 – 11.30 Minimal volume photoacoustic cell as a Helmholtz resonator

Mioljub Nešić[1,2], Marica Popović[1,2], M. Rabasović[3] , Dragan Markušev[3], Slobodanka Galović[2]
[1]School of Electrical Engineering, University of Belgrade, Bulevar Kralja Aleksandra 73, 10120, Belgrade, Serbia, [2]Vinca Institute of Nuclear Sciences, University of Belgrade, PO Box 522, 10001, Belgrade, Serbia, [3]Institute of Physics, Belgrade, University of Belgrade, Pregrevica 118, 11080 Zemun, Serbia

11.30 – 11.45 Optoelectronic and charge carrier hopping properties of small diameter boron nitride nanotubes

Stevan Armaković[1], Sanja J. Armaković[2], Jovan P. Šetrajčić[1]
[1]University of Novi Sad, Faculty of Sciences, Department of Physics, Trg Dositeja Obradovića 4, 21000, Novi Sad, Serbia, [2]University of Novi Sad, Faculty of Sciences, Department of Chemistry, Biochemistry and Environmental Protection, Trg Dositeja Obradovića 3, 21000, Novi Sad, Serbia

11.45 – 12.00 Modification of electronic and chemical properties of graphene by oxygen-containing functional groups – First principles study
Ana Dobrota, Igor Pašti
University of Belgrade, Faculty of Physical Chemistry, Studentski trg 12-16, 11158 Belgrade, Serbia

12.00 – 12.15 Photoisomerisation mechanism of novel molecular switches – a theoretical investigation
Dušan Dimić, Milena Petković
Faculty of Physical Chemistry, University of Belgrade, Studentski trg 12-16, 11 158 Belgrade

12.15 – 12.30 Determination of paracetamol in pharmaceuticals by pulse perturbation of the Bray-Liebhafsky oscillatory reaction
Ana Stanojević[1], Nataša Pejić[2], Ljiljana Kolar-Anić[1, 3], Slobodan Anić[3], Dragomir Stanisavljev[1], Željko Čupić[3]
[1]Faculty of Physical Chemistry, University of Belgrade, Belgrade, Serbia, [2]Faculty of Pharmacy University of Belgrade, Belgrade, Serbia, [3]Institute of Chemistry, Technology and Metallurgy, University of Belgrade, Department of Catalysis and Chemical Engineering, Belgrade, Serbia

12.30 – 12.45 Application of multi-criteria decision making (MCDM) methods for biomedical materials selection
Dušan Petković, Miloš Madić, Miodrag Manić, Goran Radenković
Faculty of Mechanical Engineering, University of Niš, Aleksandra Medvedeva 14 Niš, Serbia

12.45 – 14.15 Lunch break with refreshments

14.15 – 15.45 7th Session – Metallurgy and Corrosion of Materials I
Chairpersons: Dr. Dragomir Glišić and Ivana Jevremović

14.15 – 14.30 Representation of microstructure of artificially aged 6061 aluminum alloy using two different etching solutions
Uroš Stamenković
Univerzitet u Beogradu, Tehnički fakultet u Boru, Vojske Jugoslavije 12, 19210 Bor, Serbia

14.30 – 14.45 Electrochemical and thermodynamic investigation of talloil diethylenetriamine imidazoline as corrosion inhibitor for carbon dioxide corrosion of mild steel
Ivana Jevremović[1], Marc Singer[2], Srđan Nešić[2], Vesna Mišković-Stanković[1]

[1]Faculty of Technology and Metallurgy, University of Belgrade, Belgrade, Serbia; [2]Institute for Corrosion and Multiphase Technology, Ohio University, Athens, OH, USA

14.45 – 15.00 Anticorrosive epoxy/clay nanocomposites and nanocoatings
Miloš Tomić[1], Violeta Likić[2], Branko Dunjić[1], Jasna Djonlagić[1]
[1]Faculty of Technology and Metallurgy, University of Belgrade, Karnegijeva 4, Belgrade, Serbia, [2]Zvezda-Helios, Radovana Grkovića 24, 32000 Gornji Milanovac, Serbia

15.00 – 15.15 Impact of crankshaft material on the elastic line deformation of his main journal
Asllan Hajderi[1], R. Kosova[2]
[1]Department of Mechanic and Transport, "Aleksander Moisiu" University" Durres, Albania, [2]Department of Mathematics "Aleksander Moisiu" University" Durres, Albania

15.15 – 15.30 Investigation on kinetics of hydrogen absorption by Zr-based alloys
Dragan Conić, Katarina Batalović
Laboratory for nuclear and plasma physics, Vinca Institute of nuclear sciences, University of Belgrade, P.O.Box 522, Belgrade, Serbia

15.30 – 15.45 Thermally induced structural transformations of $Fe_{40}Ni_{40}P_{14}B_6$ amorphous alloy
Milica M. Vasić, Vladimir A. Blagojević, Dragica M. Minić
Faculty of Physical Chemistry, University of Belgrade, Studentski trg 12-16, Belgrade, Serbia

15.45 – 16.00 Break

16.00 – 17.00 8th Session – Metallurgy and Corrosion of Materials II
Chairpersons: Dr. Dragomir Glišić and Ivana Jevremović

16.00 – 16.15 Mechanochemical treatment – a new way in powder metallurgy diamonds tools technology
Teodora Sikora[1], Janusz Konstanty[2], Andrzej Romański[2], Krystyna Wieczorek-Ciurowa[1]
[1]Cracow University of Technology, Faculty of Chemical Engineering and Technology, Cracow, Poland, [2]AGH - University of Science and Technology, Faculty of Metals Engineering and Industrial Computer Science, Cracow, Poland

16.15 – 16.30 Prediction of electrical resistivity values for binary alloys in Ag-Au-Cu-Pd system using artificial neural networks
Nikola Kostić, Dragana Živković, Saša Stojadinović, Dragan Manasijević, Ljubiša Balanović
University of Belgrade, Technical faculty in Bor, VJ12, 19210 Bor, Serbia

16.30 – 16.45 Train brakes for high speed trains
Nemanja Trifunović[1], Dejan Trifunović[2], Mirko Stijepović[1], Aleksandar Grujić[1], Jasna Stajić-Trošić[1]
[1]University of Belgrade, Institute of Chemistry, Technology and Metallurgy, Njegoševa 12, 11000 Belgrade, Serbia, [2]University of Belgrade, Faculty of Technology and Metallurgy, Karnegijeva 4, 11000 Belgrade, Serbia

16.45 – 17.00 The magnetocaloric properties of the $Mn_{2-x}Fe_xP_{0.5}As_{0.5}$ (x = 1.0 and 0.7) compounds
Igor Radelytskyi[1], R. Szymczak[1], A. Ślawska-Waniewska[1], V. Dyakonov[1,2]
[1]Institute of Physics, PAS, 02-668 Warsaw, Al. Lotników 32/46, Poland, [2]Donetsk Institute for Physics and Engineering named after O.O. Galkin, NASU, 83114 Donetsk, R. Luxembourg str. 72, Ukraine

17.00 – 17.15 Break

17.15 – 18.15 9th Session – Polymer Science
Chairpersons: Prof. Dr. Gordana Ćirić-Marjanović and Dr. Tatiana Demina

17.15 – 17.30 Chitosan-based materials for laser stereolithography
Tatiana S. Demina[1], T.A. Akopova[1], P.S. Timashov[2], V.N. Bagratashvilli[2], A.N. Zelenetskii[1]
[1]Enikolopov Institute of Synthetic Polymer Materials RAS, Moscow, Russia, [2]Institute on Laser and Information Technologies RAS, Troitsk, Russia

17.30 – 17.45 Investigations on Methacrylate based polyHIPEs for possible application as separators in Li-ion batteries
Werner Paschinger, Alexander Bismarck
Institute for Materials Chemistry & Research, University of Vienna, Waehringer Straße 42, A-1090 Wien, Austria

17.45 – 18.00 Synthesis and characterization of biodegradable diblock and triblock copolymers based on PCL and PEO
Marijana Ponjavić, Marija Nikolić, Jasna Djonlagić
Faculty of Technology and Metallurgy, University of Belgrade, Karnegijeva

4, Belgrade, Serbia

18.00 – 18.15 Synthesis and characterization of modified pectin films intended for food packaging application

Sanja Šešlija[1], Aleksandra Nešić[2], Roberto Avolio[3], Maria Errico[3], Mario Malinconico[3], Sava Veličković[4†], Melina Kalgasidis Krušić[4], Ivanka Popović[4]

[1]Institute of Chemistry, Technology and Metallurgy, University of Belgrade, Belgrade, Serbia, [2]Vinča Institute for Nuclear Sciences, University of Belgrade, Belgrade, Serbia, [3]Institute on Polymer Chemistry and Technology, Pozzuoli (Na), Italy, [4]Faculty of Technology and Metallurgy, University of Belgrade, Belgrade, Serbia

Friday, December 12, 2014

09.00 – 11.00 10th Session – Composites
Chairpersons: Dr. Edin Suljovrujić and Nataša Tomić

09.00 – 09.15 Adhesion effects of ethylene-vinyl acetate copolymer (EVA) on optical fibers

Nataša Z. Tomić, Bojan I. Medjo, Marko P. Rakin, Radmila M. Jančić–Heinemann, Radoslav R. Aleksić[†]

University of Belgrade, Faculty of Technology and Metallurgy, Karnegijeva 4, 11120 Belgrade, Serbia

09.15 – 09.30 Impact testing of kolon *p*-aramid fabrics with various types of reinforcement

Vera Obradović, Dušica Stojanović, Miloš Petrović, Irena Živković, Vesna Radojević, Petar Uskoković, Radoslav Aleksić[†]

University of Belgrade, Faculty of Technology and Metallurgy, Karnegijeva 4, 11120 Belgrade, Serbia

09.30 – 09.45 Mechanical properties of experimental composites containing a low-shrinkage monomer and monoacylphosphine oxide photoinitiator

Jovana Stašić[1], Dragica Manojlović[1], Ivana Cvijović-Alagić[2], Maja Lezaja[1], Tatjana Savić-Stanković[1], Vesna Miletić[1]

[1]University of Belgrade, School of Dental Medicine, DentalNet Research Group, Rankeova 4, Belgrade, Serbia, [2]University of Belgrade, Institute of Nuclear Sciences „Vinča“, P.O. Box 522, 11000 Belgrade, Serbia

09.45 – 10.00 Composite solid electrolytes based on $LiNO_2$

Yulia G. Mateyshina, A.S. Ulihin, N.F. Uvarov

Institute of Solid State Chemistry and Mechanochemistry, Kutateladze 18, Novosibirsk, Russia

10.00 – 10.15 Structure and properties of $BaTiO_3 – Ni_{(1-x)}Zn_{(x)}Fe_2O_4$ composites
Adis S. Džunuzović[1], N.I. Ilić[1], M.M. Vijatović Petrović[1], J.D. Bobić[1], R. Grigalaitis[2], B.D. Stojanović[1]
[1]Institute for Multidisciplinary Research, Belgrade University, Belgrade, Serbia, [2]Faculty of Physics, Vilnius University, Vilnius, Lithuania

10.15 – 10.30 Dielectrical properties of Er_2O_3 doped $BaTiO_3$ ceramics
Miloš Marjanović, Miloš Djordjević, Vesna Paunović
University of Niš, Faculty of Electronic Engineering, Aleksandra Medvedeva 14, Niš, Serbia

10.30 – 10.45 Effect of Y-doping on structure and properties of multiferroic $BiFeO_3$ ceramics
Nikola Ilić[1], Bojan Stojadinović[2], Adis Džunuzović[1], Jelena Bobić[1], Zorana Dohčević-Mitrović[2], Biljana Stojanović[1]
[1]Institute for Multidisciplinary Research, University of Belgrade, Kneza Višeslava 1, 11000 Belgrade, Serbia, [2]Institute of Physics, University of Belgrade, Pregrevica 118, Belgrade, Serbia

10.45 – 11.00 The role of mechanochemistry in preparation of high dielectric constant and low-loss electroceramics
Piotr Dulian [1], W. Bąk [2], Cz. Kajtoch [2], K. Wieczorek-Ciurowa[1]
[1]Faculty of Chemical Engineering and Technology, Cracow University of Technology, 24, Warszawska Str., 31-155 Cracow, Poland, [2]Institute of Physics, Pedagogical University, 2, Podchorążych Str., 30-084 Cracow, Poland

11.00 - 11.15 Break

11.15 – 12.45 11th Session – Catalysis
Chairpersons: Dr. Predrag Banković and Mila Krstajić

11.15 – 11.30 Analysis of catalyst wetting efficiency influence on performances of industrial TBR for hydrodesulfurization and hydrodearomatization reactions
Ivana M. Mijatović, Sandra B. Glišić, Aleksandar M. Orlović
Faculty of Technology and Metallurgy, University of Belgrade, Karnegijeva 4, 11120 Belgrade, Serbia

11.30 – 11.45 Formic acid electrooxidation on carbon supported platinum catalyst with preferential plane orientation

Mila N. Krstajić[1], Sanja I. Stevanović[1], Snežana Lj. Gojković[2], Vladislava M. Jovanović[1]
[1]*Department of Electrochemistry, ICTM, University of Belgrade, Serbia*
[2]*Faculty of Technology and Metallurgy, University of Belgrade, Serbia*

11.45 – 12.00 Effect of electron acceptors on the kinetics of alprazolam photodegradation under simulated solar irradiation

Nina L. Finčur, Daniela V. Šojić, Vesna N. Despotović, Biljana F. Abramović
University of Novi Sad, Department of Chemistry, Biochemistry and Environmental Protection, Faculty of Sciences, Trg D. Obradovića 3, 21000 Novi Sad, Serbia

12.00 – 12.15 Influence of calcination temperature of La-doped titania to the degradation efficiency of beta blockers in water suspension

Sanja Armaković[1], Biljana Abramović[1], Mirjana Grujić-Brojčin[2], Maja Šćepanović[2], Aleksandar Golubović[2]
[1]*Department of Chemistry, Biochemistry and Environmental Protection, Faculty of Sciences, University of Novi Sad, Trg D. Obradovića 3, 21000 Novi Sad, Serbia,* [2]*Center for Solid State Physics and New Materials, Institute of Physics, University of Belgrade, Pregrevica 118, 11080 Belgrade, Serbia*

12.15 – 12.30 Hydrogen storage in MgH_2 enhanced by addition of VO_2(B)

Sanja Milošević[1], Luca Pasquini[2], Igor Milanović[1], Andjelka Djukić[1], Ljiljana Matović[1], Željka Rašković-Lovre[1], Jasmina Grbović Novaković[1]
[1]*Vinča Institute of Nuclear Sciences, University of Belgrade, Belgrade, Serbia,* [2]*Department of Physics and Astronomy, University of Bologna, Bologna, Italy*

12.30 – 12.45 Desorption properties of MgH_2 -TiO_2 nanocomposites for hydrogen storage

Ana Mraković[1], Sanja Milošević[1], Radojka Vujasin[1], Slavko Mentus[2], Sandra Kurko[1], Jasmina Grbović Novaković[1]
[1]*Vinča Institute of Nuclear Sciences, University of Belgrade, Belgrade, Serbia,* [2]*Faculty of Physical Chemistry, University of Belgrade, Belgrade, Serbia*

12.45 – 13.45 Lunch break with refreshments

13.45 – 15.15 12th Session – Environmental Science
Chairmen: Dr. Smilja Marković and Mina Jovanović

13.45 – 14.00 Magnetic macroporous copolymer for technetium-99 removal from contaminated groundwater

Bojana Ekmeščić[1], Drina Janković[2], Danijela Maksin[2], Aleksandar Vukadinović[2], Aleksandra Nastasović[1], Vojislav Spasojević[2], Vladan Kusigerski[2]

[1]University of Belgrade, ICTM, Njegoševa 12, Belgrade, Serbia, [2]University of Belgrade, Vinča Institute of Nuclear Sciences, P.O. Box 522, Belgrade, Serbia

14.00 – 14.15 Technetium-99 removal by amino-functionalized macroporous copolymer

Zvjezdana Sandić[1], Bojana Ekmeščić[3], Aleksandar Vukadinović[2], Drina Janković[2], Danijela Maksin[2], Ljiljana Suručić[3], Aleksandra Nastasović[3]

[1]University of Banja Luka, Faculty of Sciences, Mladena Stojanovića 2, Banja Luka, Republic of Srpska, B&H, [2]University of Belgrade, Vinča Institute of Nuclear Sciences, P.O. Box 522, Belgrade, Serbia, [3]University of Belgrade, ICTM, Njegoševa 12, Belgrade, Serbia

14.15 – 14.30 The application of the polymer-zeolyte composite materials for the waste gas treatment

Dragutin M. Nedeljković, Aleksandar S. Stajčić, Aleksandar S. Grujić, Mirko Z. Stijepović, Jasna T. Stajić-Trošić

University of Belgrade, Institute of Chemistry, Technology and Metallurgy, Njegoševa 12, 11000 Belgrade, Serbia

14.30 – 14.45 Mn(II) adsorption onto commercial zeolite A: process kinetics and mechanism

Mina Jovanović[1], Iztok Arcon[2,3], Nataša Novak Tusar[4,2], Bojana Obradović[5], Nevenka Rajić[5]

[1]Innovation Center of the Faculty of Technology and Metallurgy, Karnegijeva 4, 11000 Belgrade, Serbia, [2]University of Nova Gorica, Vipavska 13, 5000 Nova Gorica, Slovenia, [3]Institute Jozef Stefan, Jamova 39, 1000 Ljubljana, Slovenia, [4]National Institute of Chemistry, Hajdrihova 19, 1000 Ljubljana, Slovenia, [5]Faculty of Technology and Metallurgy, University of Belgrade, Karnegijeva 4, 11000 Belgrade, Serbia

14.45 – 15.00 Dynamic adsorption of Rhodamine B from dilute aqueous solutions using negatively-charged membrane adsorbers

Tanja Tomković, Aleksandra Nastasović, Filip Radovanović

University of Belgrade, Institute for Chemistry, Technology and Metallurgy, Njegoševa 12, Belgrade

15.00 – 15.15 Organic/inorganic nanosilica support role in the recovery of terephthalic acid from poly(ethylene terephthalate) wastes
Elmira Ghamary, Mir Mohammad Alavi Nikje
Chemistry Department, Faculty of Science, Imam Khomeini International University, PO Box: 288, Qazvin, Iran

15.15 – 15.30 Quantification of basic dyes adsorption onto mesoporous silica SBA-15 using image analysis software
Aleksandra Nešić[1], Maja Kokunesoski[1], Tatjana Volkov-Husović[2], Sava Veličković[2†]
[1]Vinča Institute of Nuclear Sciences, University of Belgrade, Belgrade, [2]Faculty of Technology and Metallurgy, University of Belgrade, Belgrade, Serbia

15.30 - 15.45 Break

15.45 – 17.15 13th Session – Thin films and coatings
Chairmen: Dr. Rastko Vasilić and Alexander Kukharchik

15.45 – 16.00 Study of the surface topography of thin-film conductive nanostructured coatings and the relative effects
Alexander Kukharchik[1,2], Natalia Kamanina[1,2]
[1]Lab for Photophysics of media with nanoobjects, Vavilov State Optical Institute, Kadetskaya Liniya V.O., dom.5, korpus 2, St.- Petersburg, 199053, Russia, [2]Saint-Petersburg Electrotechical University ("LETI"), St. Petersburg, Russia

16.00 – 16.15 Structural characterization of $BaTiO_3$ thin films obtained with spin coating and inkjet printing method
Jelena Vukmirović[1], Djordjije Tripković[1], Branimir Bajac[1], Nataša Samardžić[2], Elvira Djurdjić[3], Željka Cvejić[3], Goran Stojanović[2], Vladimir V. Srdić[1]
[1]Department of Materials Engineering, Faculty of Technology, University of Novi Sad, Serbia, [2]Department of Microelectronics, Faculty of Technical Sciences, University of Novi Sad, Serbia, [3]Department of Physics, Faculty of Sciences, University of Novi Sad, Serbia

16.15 – 16.30 Synthesis, structural characterization and dielectric properties of barium titanate thin films
Jovana Stanojev[1], Branimir Bajac[1], Jelena Vukmirović[1], Djordjije Tripković[1] Elvira Djurdjić[2], Željka Cvejić[2], Vladimir Srdić[1]

[1]Faculty of Technology, Department of Materials Engineering, University of Novi Sad, Bul. Cara Lazara 1, 21000 Novi Sad, Serbia, [2]Faculty of Sciences, Department of Physics, University of Novi Sad, Trg D. Obradovića 4, 21000 Novi Sad, Serbia

16.30 – 16.45 Graphene synthesis from solid precursor: the effect of annealing temperature and time

Jovana Prekodravac[1], Zoran Marković[1], Ivanka Holclajtner Antunović[2], Svetlana Jovanović[1], Milica Budimir[1], Biljana Todorović Marković[1]
[1]Vinča Institute of Nuclear Sciences, University of Belgrade, P. O. B. 522, 11001 Belgrade, Serbia, [2]Faculty of Physical Chemistry, University of Belgrade, Studentski trg 12-16, 11158 Belgrade118, P. O. B. 47, Serbia

16.45 – 17.00 Relaxation of AC conductivity of isotactic polypropylene(iPP) after treatment in a solution of LiCl at a high positive electrical potential

Ivan Petronijević[1], Filip Marinković[1], Jablan Dojčilović[1], Adriaan S. Luyt[2] and Duško Dudić[2,3]
[1]Faculty of Physics, University of Belgrade, Studentski trg 12-16, 11000 Belgrade, Serbia, [2]Department of Chemistry, University of the Free State (Qwaqwa Campus),Private Bag X13, Phuthaditjhaba 9866, South Africa, [3]University of Belgrade – Vinča Institute of Nuclear Sciences, PO Box 522, 11001, Belgrade, Serbia

17.00 – 17.15 Manganese electrodeposition with the assistance of urea in high concentration

Mihael Bučko[1], Mladen Vuruna[1], Ljubica Radović[2], Jelena B. Bajat[3]
[1]Military Academy, University of Defense, P.J. Sturma 33, Belgrade, [2]Military Technical Institute, Ratka Resanovića 1, Belgrade, [3]Faculty of Technology and Metallurgy, University of Belgrade, P.O. Box 3503, Belgrade, Serbia

17.15 – 17.30 Break

17.30 – 18.45 14th Session – Various Problems in Materials Science
Chairpersons: Dr. Ljiljana Matović and Aleksandar Matković

17.30 – 17.45 Relating nanoscopic structure to macroscopic properties of liquid-phase exfoliated graphene

Aleksandar Matković, Marijana Milićević, Ivana Milošević, Jelena Pešić, Borislav Vasić, Marko Spasenović, Radoš Gajić
Center for Solid State Physics and New Materials, Institute of Physics, University of Belgrade, Pregrevica 118, 11080 Belgrade, Serbia

17.45 – 18.00 **Atomic force microscopy and Kelvin probe force microscopy measurements of single and few layer grapheme**

Uroš Ralević[1], Borislav Vasić[1], Aleksandar Matković[1], Roman Gorbachev[2], Radoš Gajić[1]

[1]Graphene laboratory, Center for Solid State Physics and New Materials, Institute of Physics, University of Belgrade, Pregrevica 118, 11080 Belgrade, Serbia, [2]Centre for Mesoscience & Nanotechnology, University of Manchester, Manchester M13 9PL, UK

18.00 – 18.15 **AFM study of bacteria treated with graphene quantum dots**

Biljana Ristić[1], Marina Milenković[1], Ivana Dakić[1], Biljana Todorović-Marković[2], Momir Milosavljević[2], Milica Budimir[2], Verica Paunović[1], Miroslav Dramićanin[2], Zoran Marković[2], Vladimir Trajković[1]

[1]Institute of Microbiology and Immunology, School of Medicine, University of Belgrade, Dr. Subotica 1, 11000 Belgrade, Serbia, [2]Vinca Institute of Nuclear Sciences, University of Belgrade, 11000 Belgrade, Serbia

18.15 – 18.30 **Determination of Nd-Yag laser parameters for metal threads cleaning in textile artefacts**

Bojana Radojković[1], Slavica Ristić[1], Milorad Zrillić[2], Suzana Polić[3]

[1]Institute Goša, Milana Rakića 35, Belgrade, Serbia, [2]Faculty of Technology and Metallurgy, University of Belgrade, Karnegijeva 4, Belgrade, [3]Central Institute for Conservation in Belgrade, Terazije 26, Belgrade, Serbia

18.30 – 18.45 **Mössbauer study of $Hf_{0.5}Ta_{0.5}Fe_2$**

Ivan Madjarević[1], V. Ivanovski[1], B. Cekić[1], C. Petrović[2]

[1]Laboratory of Nuclear and Plasma Physics, University of Belgrade, Vinča Institute of Nuclear Sciences, P.O. Box 522, 11001 Belgrade, Serbia, [2]Condensed Matter Physics and Materials Science Department, Brookhaven National Laboratory, Upton, New York 11973, USA

18.45 **Closing Ceremony**

X/7

Effect of Y-doping on structure and properties of multiferroic $BiFeO_3$ ceramics

Nikola Ilić[1], Bojan Stojadinović[2], Adis Džunuzović[1],
Jelena Bobić[1], Zorana Dohčević-Mitrović[2], Biljana Stojanović[1]
[1]Institute for Multidisciplinary Research, University of Belgrade, Kneza Višeslava 1, 11000 Belgrade, Serbia, [2]Institute of Physics, University of Belgrade, Pregrevica 118, Belgrade, Serbia

Bismuth ferrite ($BiFeO_3$) exhibits ferroelectric and antiferromagnetic properties up to very high temperatures, and is, consequently, considered one of the most promising single phase multiferroic materials. Doping with Y^{3+} was tested in terms of improving electrical and magnetic properties. $Bi_{1-x}Y_xFeO_3$ was synthesized by auto-combustion method using urea as a fuel. Precursor powders were annealed, pressed and sintered. Powders and ceramic samples were characterized by XRD, SEM, Raman, electrical and magnetic measurements. X-ray diffractograms and Raman spectra showed transition from rhombohedral to orthorhombic structure at 10 % Y^{3+} content. SEM images indicated reduction in grain size with higher concentration of Y^{3+}.

X/8

The role of mechanochemistry in preparation of high dielectric constant and low-loss electroceramics

Piotr Dulian [1], W. Bąk [2], Cz. Kajtoch [2], K. Wieczorek-Ciurowa[1]
[1]Faculty of Chemical Engineering and Technology, Cracow University of Technology, 24, Warszawska Str., 31-155 Cracow, Poland, [2]Institute of Physics, Pedagogical University, 2, Podchorążych Str., 30-084 Cracow, Poland,

High-energy ball milling process of solids often offers unique opportunities for the creation of value-added materials especially with perovskite structure. These studies are aimed to explain the advantages of the mechanochemical synthesis of polycrystalline ceramics with ultrahigh dielectric constants and low dielectric losses.

The results of comparison the syntheses' results using mechanochemical and high-temperature treatments are presented. Additionally, the influence of impurities from ball milling processes is considered.

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