

**NINTH ANNUAL CONFERENCE OF THE YUGOSLAV MATERIALS
RESEARCH SOCIETY**

YUCOMAT 2007

Hotel "Plaža", Herceg Novi, Montenegro, September 10–14, 2007
<http://www.yu-mrs.org.yu>



Programme and The Book of Abstracts

Organised by:
**Yugoslav Materials Research Society,
Faculty of Metallurgy and Technology, Podgorica**
and
**Institute of Technical Sciences of the
Serbian Academy of Sciences and Arts, Belgrade**

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Yu-MRS

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HISTORY:

Materials science and engineering incorporate acquiring of knowledge on synthesis and processing of materials, their composition and structure, properties and behaviour, functions and potentialities as well as application of that knowledge to various final products. Economic prosperity, life quality, and healthy environment are tightly connected with the improvements in the existing and the development of new materials and processing technologies. These improvements and development can contribute greatly to the national priorities: energy saving, environment and health protection, information and communication, infrastructure, transportation, etc.

The Yugoslav Materials Research Society (Yu-MRS), a non-government and non-profit scientific association, was founded in 1997 to promote multidisciplinary goal-oriented research in materials science and engineering. Main task and objective of the Society is to encourage creativity in materials research and engineering to reach a harmonic coordination between achievements in this field in our country and analogous activities in the world with an aim to include our country into the global international projects.

The First Conference on materials science and engineering, including physics, physical chemistry, condensed matter chemistry, and technology in general, was held in September 1995, in Herceg Novi. An initiative to establish Yugoslav Materials Research Society was born at the conference. Similar to other MR societies in the world, the programme was made and objectives determined. Until 2003 Conferences were held every second year and then they grew into Annual Conference that will be traditionally held in Herceg Novi in September of every year.

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Programme

CONFERENCE PROGRAMME

SYMPOSIUM A Advanced Methods in Synthesis and Processing of Materials
SYMPOSIUM B Advanced Materials for High-Technology Application
SYMPOSIUM C Nanostructured Materials
SYMPOSIUM D Composites
SYMPOSIUM E Biomaterials
WORKSHOP: Serbia-Slovenia Bilateral Cooperation
TECHNOLOGICAL FORUM

GENERAL INFORMATION

DATE AND VENUE: The conference will be held on September 10-14, 2007, at the PLAŽA Hotel, in Herceg Novi, Montenegro. Participants will be accommodated at the Plaža Hotel. The conference will begin on Monday, September 10th, at 09.00 and end on Friday, September 14th, 2007 at 12.30.

REGISTRATION: Registration, registration fee payment, conference materials distribution, etc. will take place at the conference desk (Conference Secretariat) open on Sunday, September 9, and Monday, September 10, from 8.00 to 19.00, on Tuesday to Thursday 8.00-10.00, 14.00-16.00 and 18.00-20.00, and on Friday from 8.00 to 12.30. At registration, the participants are requested to submit proof of their advance registration fee payment.

INSTRUCTION FOR AUTHORS: The conference will feature plenary sessions, poster sessions, Workshop on Slovenia-Serbia Bilateral Cooperation and Technological Forum.

Oral presentations of papers to be given in **PLENARY SESSIONS** are limited. Time available for delivery is 30 min for invited and 15 min for other papers including discussion (5-10 min). Video-beam is available. PowerPoint presentations, recorded on CD only, should be given at registration.

In **POSTER SESSIONS**, the authors are requested to display their papers minimum two hours before the session and to be present beside their posters during the session. Poster sessions are held in Business Club (next to the National Restaurant, looking at the beach) and it is open Tuesday to Thursday 8.00-10.00, 14.00-16.00 and 18.00-22.00.

During Technological Forum, leading experts from business, industry, research laboratories and universities from Europe and United States will be discussing topics related to the current status of various aspects in the field of advanced materials (education, research, technological aspects), the significance of transferring technologies and outsourcing to the developing countries, the significance of innovations and spin off companies in the modern production network, clean production, environment recognition, the necessities of industries in specialized engineering staff, etc.

PUBLICATION OF PAPERS: Abstracts will be included in a book of abstracts and distributed to each participant at registration.

The Proceedings will be published, as those from the previous conferences, by Trans Tech Publications Ltd., Switzerland, in Materials Science Forum Edition. The papers will be refereed and those selected will be included in the Proceedings Volume. Certain number of papers will be published as special thematic issue in "Materials and Manufacturing Processes" and "Surface Engineering", invited by the publishers "Taylor and Francis" and "Maney Publishing".

CONFERENCE AWARDS: The Yugoslav Materials Research Society will award the authors (preferable young members under 35) of the best oral and poster presentation at the conference, and also the authors of highly rated PhD and MSc theses defended between two conferences. The benefits include free registration and YUCOMAT 2007 Conference Proceedings.

EXCURSIONS: Excursions will be organised on Wednesday afternoon (bus trip to Dubrovnik) and Friday after the close of the Conference (boat trip around Boka Kotorska Bay).

GENERAL CONFERENCE PROGRAMME

Sunday, September 9, 2007

08⁰⁰-19⁰⁰ Registration
16⁰⁰-18⁰⁰ **Technological Forum**
(Press-Hall)

Monday, September 10, 2007

07³⁰-09⁰⁰ Registration

09⁰⁰ **OPENING CEREMONY**
- Introduction and Welcome

10⁰⁰-13³⁰ **First Plenary Session**
(Chairpersons: R. Sinclair, M. Vukčević and V. Radmilović)

13³⁰ **Photo Session**

15⁰⁰-19¹⁵ **Symposium A** (Chairpersons: J. Varela, V. Dondur and M. Drogenik)

19³⁰-20³⁰ **Cocktail Party**

Tuesday, September 11, 2007

09⁰⁰-12³⁰ **Second Plenary Session**(Chairpersons: F. Ross, D. Suvorov and S. Milonjić)

15⁰⁰-19¹⁵ **Symposium B** (Chairmen: N. Kallay, S. Mentus and M. Davidović)

15⁰⁰-16⁴⁵ **Workshop Serbian-Slovenian Bilateral Cooperation** (Press-Hall)
(Chairpersons: M. Remškar, Z.Lj. Petrović and N. Rajić)

20³⁰-22⁰⁰ **Poster Session I** (Symposium A)

Wednesday, September 12, 2007

09⁰⁰-12³⁰ **Third Plenary Session**
(Chairpersons: A. Auroux, A.Ye. Yermakov and D. Raković)

14⁰⁰-19⁰⁰ **Excursion to Dubrovnik**

20³⁰-22⁰⁰ **Poster Session II** (Symposium B)

Thursday, September 13, 2007

09⁰⁰-12³⁰ **Fourth Plenary Session** (Chairmen: E. Traversa, J. Czernuszka and M. Plavšić)

15⁰⁰-19⁰⁰ **Symposium C** (Chairmen: X. Batlle, M. Zlatanović and J. Nedeljković)

20³⁰-22⁰⁰ **Poster Session III** (Symposiums C, D and E)

Friday, September 14, 2007

09⁰⁰-12⁰⁰ **Symposium E** (Chairpersons: I. Ćosić, Dj. Koruga and J.P. Šetrajić)

12⁰⁰-12³⁰ **Awards and Closing of the Conference**

14⁰⁰ **Excursion around Boka Kotorska Bay**

SYMPOSIUM A: Advanced Methods in Synthesis and Processing of Materials
SYMPOSIUM B: Advanced Materials for High- Technology Application
SYMPOSIUM C: Nanostructured Materials
SYMPOSIUM D: Composites
SYMPOSIUM E: Biomaterials

FIRST PLENARY SESSION

Monday, September 10, 2007

Session I: 10⁰⁰-13³⁰

Chairpersons: R. Sinclair, M. Vukčević and V. Radmilović

10⁰⁰-10³⁰ **CHARACTERIZATION AND MANIPULATION OF FUNCTIONAL NANOSTRUCTURES USING HIGH RESOLUTION ANALYTICAL TEM AND COMBINED SPM-TEM**

E. Olsson

Department of Applied Physics, Chalmers University of Technology, Göteborg, Sweden

10³⁰-11⁰⁰ **CONTROLLED ASSEMBLY OF EPITAXIAL NANOSTRUCTURES FOR NANO-ELECTRONIC APPLICATIONS**

R. Hull¹, J. Gray^{1,2}, J. Graham¹, M. Kammler^{1,3}, A. Portavoce^{1,4}, M. Gherasimova¹, S. Wolf¹, J. Floro¹, F. Ross⁵

¹Department of MSE, University of Virginia, Charlottesville, Virginia, USA, ²Now at U. Pittsburgh, PA, USA, ³Now at Infineon, Dresden, Germany; ⁴Now at CNRS, Marseilles, France; ⁵IBM TJ Watson Research Center, Yorktown Heights New York, USA

11⁰⁰-11³⁰ **SEMICONDUCTOR NANOWIRE NUCLEATION AND GROWTH KINETICS**

F.M. Ross

IBM T.J. Watson Research Center, Yorktown Heights, New York, USA

Break: 11³⁰-12⁰⁰

12⁰⁰-12³⁰ **SOME RECENT DEVELOPMENTS IN NANO-MATERIALS**

R. Sinclair

Department of Materials Science and Engineering, Stanford University, Stanford, California, USA

12³⁰-13⁰⁰ **FINITE SIZE EFFECTS ON DISTRIBUTION AND SHAPE OF SMALL PARTICLES**

D. Chatain

CRM-CNRS, Marseille, France

13⁰⁰-13³⁰ NOVEL METALLIC THIN FILMS FOR NEMS APPLICATION

V. Radmilović¹, D. Mitlin²

¹National Center for Electron Microscopy, Lawrence Berkeley National Laboratory, University of California, Berkeley, California, ²Chemical and Materials Engineering, University of Alberta and National Institute for Nanotechnology, Edmonton, Alberta, Canada

Break: 13³⁰-15⁰⁰

SYMPOSIUM A: ADVANCED METHODS IN SYNTHESIS AND PROCESSING OF MATERIALS

Session I: 15⁰⁰-19¹⁵

Chairpersons: J.A. Varela, V. Dondur and M. Drofenik

15⁰⁰-15¹⁵ PREPARATION AND STUDY OF ZINC – DOPED MAGHEMITE NANOPARTICLES

M. Drofenik^{1,2}, M. Kristl², D. Makovec¹, Z. Jagličič³, D. Hanžel¹

¹Jožef Stefan Institute, Ljubljana, Slovenia, ²Faculty of Chemistry and Chemical Engineering, University of Maribor, Slovenia, ³Institute of Mathematics, Physics and Mechanics and Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia

15¹⁵-15³⁰ PREPARATION AND MULTILAYERED AGGREGATION OF UNIFORM COLLOIDAL CHOLESTEROL PARTICLES

V. Uskoković, E. Matijević

Center for Advanced Materials Processing, Clarkson University, Potsdam, NY, USA

15³⁰-15⁴⁵ DESIGN OF 3D FUNCTIONAL ARTICLES BY USING COMBINED SHS-SLS

M.V. Kuznetsov¹, Yu.G. Morozov¹, I.V. Shishkovsky², I.P. Parkin³

¹Institute of Structural Macrokineetics and Materials Science Russian Academy of Sciences, Chernogolovka, Moscow region, Russia, ²Lebedev Physics Institute, Samara Branch, Russian Academy of Sciences, Samara, Russia, ³Department of Chemistry, Christopher Ingold Labs, University College London, London, UK

15⁴⁵-16⁰⁰ SYNTHESIS AND CHARACTERIZATION OF POLYANILINE-ZEOLITE NANOCOMPOSITE

V. Dondur¹, G. Ćirić-Marjanović¹, A. Radulović², Z. Vuković³, M. Milojević¹

¹Faculty of Physical Chemistry, Belgrade, Serbia

²Institute of General and Physical Chemistry, Belgrade, Serbia

³Department of Catalysis and Chemical Engineering, ICTM, Belgrade, Serbia

16⁰⁰-16¹⁵ **HARD MAGNETIC Co-Pt FILMS PREPARED BY ELECTRODEPOSITION**
K. Žužek Rožman^{1,2}, A. Krause², K. Leistner², H. Schlörb², S. Fähler², S. Baunack²,
L. Schultz²
¹*Jozef Stefan Institute, Ljubljana, Slovenia,* ²*IFW Dresden, Dresden, Germany*

16¹⁵-16³⁰ **SYNTHESIS OF Bi₃Nb_{1-x}Ta_xO₇ FLURITE - TYPE DIELECTRICS BY POLYMERIC PRECURSOR METHOD**
U. Pirnat¹, S.D. Škapin¹, D. Suvorov¹, M.A. Zaghete², J.A. Varela²
¹*Advanced Materials Department, Jozef Stefan Institute, Ljubljana, Slovenia,*
²*Instituto de Química, UNESP, Araraquara, Brasil*

16³⁰-16⁴⁵ **RHOMBOHEDRAL CALCITE PRECIPITATION FROM CO₂-H₂O-Ca(OH)₂ SLURRY AT 90 °C AND 90 bar**
G. Montes-Hernandez, F. Renard, L. Charlet
LGIT, Maison de Géosciences, BP 53 X, Grenoble, France

16⁴⁵-17⁰⁰ **HYDROTHERMAL PROCESSING OF 1D -NANOMATERIALS FROM MINERAL SANDS**
L. Mančić¹, B. Marinković², P. Jardim², F. Rizzo², O. Milošević¹
¹*Institute of Technical Science of SASA, Belgrade, Serbia,*
²*Pontificia Universidade Catolica do Rio de Janeiro, Rio de Janeiro, Brasil*

Break: 17⁰⁰-17³⁰

17³⁰-17⁴⁵ **FRACTAL ASPECTS OF DISCRETE FRACTURE MECHANICS**
M.P. Wnuk
College of Engineering and Mathematical Science, University of Wisconsin – Milwaukee, Milwaukee, USA

17⁴⁵-18⁰⁰ **SOLVENT-FREE MECHANOCHEMICAL SYNTHESIS OF SOME PHYSIOLOGICALLY ACTIVE SUBSTANCES**
N. Pankrushina^{1,2}, I. Nikitina^{1,2}, E. Chernjak¹, C. Myz^{2,3}, T. Shakhtshneider^{2,3}, V. Boldyrev^{2,3}
¹*Institute of Organic Chemistry, Novosibirsk, Russia,* ²*Research and Education Centre "Molecular Design and Ecologically Safe Technologies" at Novosibirsk State University, Russia,* ³*Institute of Solid State Chemistry and Mechanochemistry, Novosibirsk, Russia*

18⁰⁰-18¹⁵ **MECHANICAL MILLING: EVOLUTION OF CRYSTAL PARAMETER OF IRON POWDER**
I. Taut¹, G. Arghir¹, C. Popa¹, S.-D. Bolboacă², L. Jäntschi¹
¹*Technical University of Cluj-Napoca, Romania,* ²*"Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca, Romania*

- 18¹⁵-18³⁰ **SUPERFICIAL DISTORTION INFLUENCE ON CHARACTERISTICS OF THE IRON-BASED MATERIALS**
L. Brândușan, L. Jäntschi
Technical University of Cluj-Napoca, Romania
- 18³⁰-18⁴⁵ **PLASMA POST-PROCESSING IN OXYGEN AND CARBON CONTAINING ATMOSPHERES FOR WIND TURBINE COMPONENTS TREATMENT**
M. Zlatanović¹, N. Popović²
¹*Faculty of Electrical Engineering, Belgrade, Serbia,*
²*Nuclear Science Institute Vinča, Belgrade, Serbia*
- 18⁴⁵-19⁰⁰ **SYNTHESIS OF OLIVINE-TYPE LiFePO₄ BY SONOCHEMICAL METHOD**
D. Jugović¹, M. Mitrić², N. Cvjetičanin³, S. Mentus³, D. Uskoković¹
¹*Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, Belgrade, Serbia,* ²*The Vinča Institute of Nuclear Sciences, Belgrade, Serbia,*
³*Faculty of Physical Chemistry, University of Belgrade, Serbia*
- 19⁰⁰-19¹⁵ **SYNTHESIS AND CHARACTERIZATION OF IRON CONTAINING MCM-41 POROUS SILICA – APPLICATION TO ADSORPTION OF ARSENATES**
E.A. Deliyanni, K.S. Triantafyllidis, E.N. Peleka, K.A. Matis
Section of Chemical Technology & Industrial Chemistry, Department of Chemistry, Aristotle University, Thessaloniki, Greece

SECOND PLENARY SESSION

Tuesday, September 11, 2007

Session II: 09⁰⁰-13⁰⁰

Chairpersons: F. Ross, D. Suvorov and S. Milonjić

09⁰⁰-09³⁰ **NEW DEVELOPMENTS IN QUANTITATIVE 3D STRUCTURE ANALYSIS OF THIN SOLID FILMS BY TRANSMISSION ELECTRON MICROSCOPY**
E. Spiecker
Microanalysis of Materials, Faculty of Engineering, Kiel University, Kiel, Germany

09³⁰-10⁰⁰ **USING REAL TIME MICROSCOPY TO QUANTITATIVELY DETERMINE NUCLEATION MECHANISMS AND KINETICS DURING THE GROWTH OF Si NANOWIRES AND CARBON NANOTUBES**
E. A. Stach¹, B.-J. Kim¹, S.M. Kim¹, S. Kodambaka², J. Tersoff², M.C. Reuter², K. Reuter², F.M. Ross², B. Maruyama³, M. Pender³
¹*School of Materials Engineering & Birck Nanotechnology Center, Purdue Univ., West-Lafayette, IN, USA*, ²*Research Division, IBM T.J. Watson Research Center, Yorktown Heights, NY, USA*, ³*Materials and Manufacturing Directorate, Air Force Research Laboratory, Dayton, OH, USA*

10⁰⁰-10³⁰ **BULK NANOCRYSTALLINE ALLOYS STUDIED BY TEM**
H.P. Karnthaler, Ch. Rentenberger, Th. Waitz
Materials Physics, University of Vienna, Vienna, Austria

10³⁰-11⁰⁰ **APPLICATION OF HIGH SPATIAL AND HIGH ENERGY RESOLUTION ANALYTICAL TOOLS FOR THE CHARACTERIZATION OF ADVANCED MATERIALS**
Ch.A. Evans
Evans Analytical Group (EAG), Sunnyvale, CA, USA

Break: 11⁰⁰-11³⁰

11³⁰-12⁰⁰ **BIOLOGICALLY ENABLED ASSEMBLY OF NANOSTRUCTURED MATERIALS WITH COMPLEX THREE-DIMENSIONAL MORPHOLOGIES AND CHEMISTRIES**
K.H. Sandhage, M.R. Weatherspoon, S. Shian, Zh. Bao, E. Ernst, Ph. Graham, M.B. Dickerson, G. Ahmad
School of Materials Science & Engineering, Georgia Institute of Technology, Atlanta, GA, USA

12⁰⁰-12³⁰ **CHARACTERIZATION OF SOLID/LIQUID INTERFACES BY SURFACE POTENTIAL MEASUREMENTS**

N. Kallay, T. Preočanin, F. Šupljika
*Laboratory of Physical Chemistry, Department of Chemistry, Faculty of Science,
University of Zagreb, Zagreb, Croatia*

12³⁰-13⁰⁰ **BI-BASED MATERIALS FOR GLASS-FREE LTCC MODULES**

D. Suvorov
Advanced Materials Department, »Jozef Stefan« Institute, Ljubljana, Slovenia

Break: 13⁰⁰-15⁰⁰

SYMPOSIUM B: ADVANCED MATERIALS FOR HIGH-TECHNOLOGY APPLICATION

Session I: 15⁰⁰-19¹⁵

Chairmen: N. Kallay, S. Mentus and M. Davidović

15⁰⁰-15¹⁵ **LITHIUM CONDUCTING PEROVSKITES**

A. Belous
*V.I.Vernadskii Institute of General and Inorganic Chemistry NAS of Ukraine, Kyiv,
Ukraine*

15¹⁵-15³⁰ **LOW-LOSS MICROWAVE DIELECTRICS BASED ON THE COLUMBITES A²⁺Nb₂O₆ AND PEROVSKITES Ba(A²⁺_{1/3}Nb_{2/3})O₃: THE EFFECT OF COMPOSITIONAL VARIATION**

A. Belous¹, O. Ovchar¹, B. Jančar²
*¹V.I.Vernadskii Institute of General and Inorganic Chemistry NAS of Ukraine, Kyiv,
Ukraine, ²Jozef Stefan Institute, Ljubljana, Slovenia*

15³⁰-15⁴⁵ **MOLDING FLUORESCENCE EMISSION BY PHOTONIC BAND GAP ENGINEERING**

B. Kolarić, K. Baert, R.A.L. Vallée, M. Van der Auweraer, K. Clays
*Department of Chemistry, K.U. Leuven and the Institute of Nanoscale Physics and
Chemistry (INPAC), Heverlee, Belgium*

15⁴⁵-16⁰⁰ **PROPERTIES OF NdCr₃(BO₃)₄ BORATE: SPECTROSCOPIC STUDY**

M.N. Popova¹, E.P. Chukalina¹, K.N. Boldyrev¹, N.I. Leonyuk²
*¹Institute of Spectroscopy of RAS, Troitsk, Moscow region, Russia, ²Moscow State
University, Moscow, Russia*

- 16⁰⁰-16¹⁵ **EXITON-IMPURITY ENERGY TRANSFER DYNAMICS IN NEW LOW PHONON ENERGY LASER MATERIALS**
A.M. Tkachuk^{1,2}, S.E. Ivanova², M.-F. Joubert³, Y. Guyot³
¹*Scientific Production Corporation "S.I. Vavilov State Optical Institute", St. Petersburg, Russia,* ²*University of Information Technology, Mechanics and Optics, St. Petersburg, Russia,* ³*LPCML, UMR 5620 du CNRS, Universite Lyon 1, Villeurbanne, France*
- 16¹⁵-16³⁰ **NEW RE DOPED FLUORIDE AND CHLORIDE CRYSTALS FOR EFFICIENT OPTICAL CONVERTERS**
S.E. Ivanova¹, A.M. Tkachuk^{1,2}, M.-F. Joubert³, Y. Guyot³, V.P. Gapontzev⁴
¹*University of Information Technology, Mechanics and Optics, St. Petersburg, Russia,* ²*Scientific Production Corporation "S.I. Vavilov State Optical Institute", St. Petersburg, Russia,* ³*LPCML, UMR 5620 du CNRS, Universite Lyon 1, Villeurbanne, France,* ⁴*IPG Laser GmbH, Burbach, Germany*
- 16³⁰-16⁴⁵ **MAGNETIC PHENOMENA IN THE 4F-ELECTRON INTERMETALLIC COMPOUNDS**
A. Szytuła
M. Smoluchowski Institute of Physics, Jagiellonian University, Kraków, Poland
- 16⁴⁵-17⁰⁰ **THE DISPROPORTIONATION PROCESS IN RARE-EARTH-TRANSITION-METAL-BASED MATERIALS: AN EXPERIMENTAL AND MODELING APPROACH**
P.J. McGuinness, K. Žužek-Rožman, M. Komelj, S. Kobe
Department for Nanostructured Materials, Jozef Stefan Institute, Ljubljana, Slovenia
- Break: 17⁰⁰-17³⁰**
- 17³⁰-17⁴⁵ **MESOPOROUS TITANIUM DIOXIDE: SYNTHESIS AND PHOTOCATALYTIC ACTIVITY**
I.V. Kolesnik, M.V. Kharlamova, A.V. Garshev, A.A. Eliseev, A.V. Lukashin, Yu.D. Tretyakov
Department of Material Science, Moscow State University, Moscow, Russia
- 17⁴⁵-18⁰⁰ **INCOMMENSURATE-COMMENSURATE PHASE TRANSFORMATION IN THE Bi₂O₃-Nb₂O₅ SOLID SOLUTION**
B. Jančar, U. Pirnat, S. Šturm, D. Suvorov
Jozef Stefan Institute, Ljubljana, Slovenia

- 18⁰⁰-18¹⁵ **SOL-GEL SYNTHESIS AND CHARACTERIZATION OF A NEW BISMUTH TITANATE PYROCHLORE CERAMIC**
Š. Kunej, D. Suvorov
Jožef Stefan Institute, Ljubljana, Slovenia
- 18¹⁵-18³⁰ **INFLUENCE OF CRYSTAL SYMMETRY ON THE VOLTAGE-TUNABILITY OF Na_{0.5}Bi_{0.5}TiO₃-BASED SYSTEMS**
M. Spreitzer, B. Jančar, D. Suvorov
Advanced Materials Department, Jozef Stefan Institute, Ljubljana, Slovenia
- 18³⁰-18⁴⁵ **PHYSICOCHEMICAL CHARACTERISTICS OF Rb⁺ AND Cs⁺ SALTS OF 12-TUNGSTOPHOSPHORIC ACID**
I. Holclajtner-Antunović¹, Ž. Čupić², M. Davidović³, U.B. Mioč¹, M. Todorović⁴, D. Jovanović², P. Banković²
¹*Faculty of Physical Chemistry University of Belgrade, Belgrade, Serbia,* ²*IHTM, Center of Catalysis and Chemical Engineering, Belgrade, Serbia,* ³*Goša Institute, Belgrade, Serbia,* ⁴*Faculty of Chemistry, Belgrade, Serbia*
- 18⁴⁵-19⁰⁰ **CARBON/CARBON-SILICON-CARBIDE DUAL-MATRIX COMPOSITES FOR BRAKE DISCS**
K. Krnel¹, T. Kosmač¹, Z. Stadler²
¹*Jožef Stefan Institute, Ljubljana, Slovenia,* ²*MS Production, Bled, Slovenia*
- 19⁰⁰-19¹⁵ **DETECTION OF THE DEGREE OF BRANCHING IN HYPERBRANCHED POLYMERS**
F. Schallausky¹, S. Reichelt¹, A. Lederer¹, M. Netopilík²
¹*Leibniz-Institute of Polymer Research Dresden, Dresden, Germany,* ²*Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, v.v.i., Prague, Czech Republic*

WORKSHOP: SERBIA – SLOVENIA BILATERAL COOPERATION

Press-Hall

Session I: 15⁰⁰-16⁴⁵

Chairpersons: M. Remškar, Z.Lj. Petrović and N. Rajić

- 15⁰⁰-15¹⁵ **PHONONS IN MoS₂ AND W S₂ NANOTUBES**
M. Damjanović¹, M. Remškar², E. Dobardžić¹, B. Dakić¹, M. Viršek², I. Milošević¹
¹*Faculty of Physics, Belgrade, Serbia,* ²*Jožef Stefan Institute, Ljubljana, Slovenia*
- 15¹⁵-15³⁰ **STUDIES OF APPLICATION AND CHARACTERIZATION OF PLASMAS USED IN TREATMENT OF POLYMERS AND ORGANIC MATERIALS**

A. Jesih¹, N. Puač², M. Radetič³, Z.Lj. Petrović², G. Malović², S. Lazović²
¹*Institute "Jožef Stefan", Ljubljana, Slovenia,* ²*Institute of Physics, Belgrade, Serbia,*
³*Textile Engineering Department, Faculty of Technology and Metallurgy, Belgrade, Serbia*

15³⁰-15⁴⁵ PULSED LASER ABLATION OF PVD MULTI-LAYERED COATINGS: PROFILOMETRIC ANALYSIS

B. Gaković¹, M. Trtica¹, S. Petrović¹, P. Panjan², M. Čekada², M. Panjan²
¹*Institute of Nuclear Sciences "Vinča", Belgrade, Serbia*
²*Jožef Stefan Institute, Ljubljana, Slovenia*

15⁴⁵-16⁰⁰ TEM STUDY OF TiAlN/CrN NANOLAYER COATINGS

M. Panjan, S. Šturm, P. Panjan, M. Čekada
Jožef Stefan Institute, Ljubljana, Slovenia

16⁰⁰-16¹⁵ SYNTHESIS AND MAGNETIC PROPERTIES OF Fe₂O₃ NANOPARTICLES IN A SILICA MATRIX

M. Tadić¹, D. Marković¹, V. Spasojević¹, V. Kusigerski¹, J. Pirnat², Z. Jagličić², Z. Trontelj², M. Remškar³
¹*Condensed Matter Physics Laboratory, Institute of Nuclear Sciences Vinca, Belgrade, Serbia,* ²*Institute of Mathematics, Physics and Mechanics, Ljubljana, Slovenia,* ³*Jozef Stefan Institute, Ljubljana, Slovenia*

16¹⁵-16³⁰ SOL-GEL PRODUCED THIN FILMS FOR PHOTOCATALYSIS

U. Lavrenčič Štangar, U. Černigoj, K. Maver, D. Mahne, S. Patil, P. Trebše
Laboratory for Environmental Research, University of Nova Gorica, Nova Gorica, Slovenia

16³⁰-16⁴⁵ ON THE PREPARATION OF METAL-ORGANIC FRAMEWORKS (MOF) AS POTENTIAL MATERIALS FOR HYDROGEN STORAGE

N. Rajič¹, Dj. Stojaković¹, N. Zabukovec Logar², V. Kaučič²
¹*Faculty of Technology and Metallurgy, Belgrade, Serbia*
²*National Institute of Slovenia, Ljubljana, Slovenia*

THIRD PLENARY SESSION

Wednesday, September 12, 2007

Session III: 09⁰⁰-12⁰⁰

Chairpersons: A. Auroux, A.Ye. Yermakov and D. Raković

- 09⁰⁰-9³⁰ **NANOSTRUCTURED MATERIALS FOR INTERMEDIATE TEMPERATURE SOLID OXIDE FUEL CELLS (IT-SOFCs)**
E. Traversa
Department of Chemical Science and Technology, University of Rome Tor Vergata, Rome, Italy
- 9³⁰-10⁰⁰ **TRANSPORT PROPERTIES OF NANOSTRUCTURED ANTIMONY-DOPED TIN OXIDE FILMS**
J.A. Varela, T.R. Giraldi, E. Longo
Universidade Estadual Paulista – UNESP, Araraquara, SP, Brazil
- 10⁰⁰-10³⁰ **NO_x ABATEMENT OVER SUPPORTED BINARY OXIDE CATALYSTS CONTAINING CuO COUPLED WITH Ga₂O₃ AND SnO₂**
S. Bennici^{1,2}, A. Gervasini¹, A. Auroux²
¹*Dip. Chimica Fisica ed Elettrochimica, Università degli Studi di Milano, Milano, Italy,* ²*IRCELYON, UMR5256 CNRS-Université Lyon 1, Villeurbanne, France*

Break: 10³⁰-11⁰⁰

- 11⁰⁰-11³⁰ **ELECTRICAL RELAXATIONS DUE TO ELECTRONS IN OXIDES**
J.-C. Badot
Laboratoire de Chimie de la Matière Condensée de Paris, UMR CNRS 7574, ENSCP, Paris, France
- 11³⁰-12⁰⁰ **SURFACE REACTIVITY OF METAL OXIDES: SORPTION AND ADHESION PROCESSES**
G. Lefèvre, Lj. Čerović, M. Fédoroff
Laboratory of Electrochemistry and Analytical Chemistry UMR7575, ENSCP-CNRS-Paris6, Paris, France

FOURTH PLENARY SESSION

Thursday, September 13, 2007

Session IV: 09⁰⁰-12³⁰

Chairmen: E. Traversa, J. Czernuszka and M. Plavšić

09⁰⁰-9³⁰ **THE FIRST INORGANIC NANOBUDS AND PEA-PODS: WS₂ AND MoS₂ FULLERENES GROWN BY DIFFUSION PROCESS**

M. Remškar, M. Viršek, A. Mrzel, A. Jesih
Jozef Stefan Institute, Ljubljana, Slovenia

09³⁰-10⁰⁰ **PROCESSING AND CHARACTERIZATION OF MAGNETIC NANOSTRUCTURED MATERIALS**

J. Wittig
Vanderbilt University, Nashville, Tennessee USA

10⁰⁰-10³⁰ **SYNTHESIS AND PROPERTIES OF METAL-CARBON NANOCOMPOSITES. SOME PERSPECTIVE APPLICATIONS IN CATALYSTS CHEMISTRY AND MEDICINE (PHOTO-THERMAL THERAPY OF TUMORS)**

A.Ye.Yermakov¹, M.A.Uimin¹, A.A.Mysik¹, E.S.Lokteva², A.A. Stratonnikov³
¹*Institute of Metal Physics, Ural Branch of RAS, Ekaterinburg, Russia*
²*M.V. Lomonosov Moscow State University, Moscow, Russia*
³*Natural Science Center of General Physics Institute of RAS, Moscow, Russia*

Break: 10³⁰-11⁰⁰

11⁰⁰-11³⁰ **Fe₃O₄ NANOPARTICLES FOR BIOMEDICAL APPLICATIONS: THE ROLE OF THE SURFACTANT**

P. Guardia¹, N. Pérez¹, A. G. Roca², O. Iglesias¹, M. P. Morales², C. J. Serna², A. Labarta¹, X. Batlle¹
¹*Departament de Física Fonamental and Institut de Nanociència i Nanotecnologia, Universitat de Barcelona, Martí i Franqués 1, Barcelona, Catalonia, Spain*, ²*Instituto de Ciencia de Materiales de Madrid, CSIC, Sor Juana Inés de la Cruz, Madrid, Spain*

11³⁰-12⁰⁰ **3-D SCAFFOLDS FOR 3-D TISSUE ENGINEERING**

J. Czernuszka
Department of Materials Sciences, Oxford University, Oxford, United Kingdom

12⁰⁰-12³⁰ BIOACTIVE PEPTIDE DESIGN USING THE RESONANT RECOGNITION MODEL

I. Čosić, E. Pirogova, J. Fang, V. Vojisavljević
School of Electrical and Computer Engineering, RMIT University, Melbourne, Australia, Australian Centre for Radiofrequency Bioeffects Research (ACRBR)

Break: 12³⁰-15⁰⁰

SYMPOSIUM C: NANOSTRUCTURED MATERIALS

Session I: 15⁰⁰-19⁰⁰

Chairmen: X. Battle, M. Zlatanović and J. Nedeljković

15⁰⁰-15¹⁵ ATOMIC RESOLUTION HAADF-STEM: APPLICATIONS IN MATERIALS SCIENCE

M. Čeh¹, S. Šturm¹, M. Shiojiri²
¹*Institute Jožef Stefan, Ljubljana, Slovenia,* ²*Kyoto Institute of Technology, Kyoto, Japan*

15¹⁵-15³⁰ NANOCATALYST ENGINEERING ON EXTENDED AND NANOSCALE SURFACES

V. Stamenković, D. Strmcnik, D. Tripković, D. van der Vliet, H. You, N.M. Marković
Argonne National Laboratory, Materials Science Division, Argonne, IL, USA

15³⁰-15⁴⁵ PREPARATION OF AMINE-FREE SILICA-COATED AgI NANOPARTICLES WITH A MODIFIED STÖBER METHOD

Y. Kobayashi^{1,2}, N. Shimizu¹, M. Takeda³, N. Ohuchi³, A. Kasuya⁴, M. Konno¹
¹*Department of Chemical Engineering, Graduate School of Engineering, Tohoku University, Aoba, Aramaki-aza, Aoba-ku, Sendai, Japan,* ²*Present address: Department of Biomolecular Functional Engineering, College of Engineering, Ibaraki University, Naka-narusawa-cho, Hitachi, Ibaraki, Japan,* ³*Division of Surgical Oncology, Graduate School of Medicine, Tohoku University, Seiryomachi, Aoba-ku, Sendai, Japan,* ⁴*Center for Interdisciplinary Research, Tohoku University, Aoba, Aramaki-aza, Aoba-ku, Sendai, Japan*

15⁴⁵-16⁰⁰ CHARACTERIZATION OF NANOPARTICLES BY FLUORESCENCE CORRELATION SPECTROSCOPY

M. Štěpánek¹, J. Humpolíčková², T. Kral²
¹*Department of Physical and Macromolecular Chemistry, Charles University, Prague, Czech Republic,* ²*Institute of Physical Chemistry, Academy of Sciences of the Czech Republic, Prague, Czech Republic*

- 16⁰⁰-16¹⁵ **MULTILAYER POLYMERIC NANOPARTICLES BASED ON SPECIFIC INTERACTIONS IN SOLUTION: LIGHT SCATTERING AND ATOMIC FORCE MICROSCOPY STUDY**
P. Matějček¹, M. Uchman¹, J. Lokajová¹, M. Špírková², K. Procházka¹
¹*Department of Physical and Macromolecular Chemistry, Charles University, Prague, Czech Republic,* ²*Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, Prague, Czech Republic*
- 16¹⁵-16³⁰ **POLYURETHANE NETWORKS WITH INORGANIC NANO-BUILDING BLOCKS**
A. Strachota¹, B. Strachotová¹, M. Špírková¹, F. Ribot²
¹*Department of Polymer Networks and Mechanical Properties, Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, Praha, Czech Republic,* ²*Institute Laboratoire de Chimie de la Matière Condensée, UMR CNRS 7574, Université Pierre et Marie Curie, Paris, France*
- 16³⁰-16⁴⁵ **EPITAXIAL GROWTH BY MONOLAYER RESTRICTED GALVANIC DISPLACEMENT**
R. Vasilic¹, N. Dimitrov²
¹*Laboratory for Atomic Physics, Institute of Nuclear Sciences Vinca, Belgrade, Serbia,* ²*Materials Science and Engineering Program, SUNY Binghamton, Binghamton, NY, USA*
- 16⁴⁵-17⁰⁰ **THIN SEMI-CONDUCTOR FILMS FORMED BY PULSED ION DEPOSITION**
M.S. Saltymakov¹, G.E. Remnev¹, I.V. Ivonin², V.I. Yurchenko³, E.P. Nayden⁴, V.A. Novikov²
¹*High Voltage Research Institute, Tomsk, Russia,* ²*Tomsk State University, Tomsk, Russia,* ³*Federal Researches Institute of Semiconductor Devices, Tomsk, Russia,* ⁴*Siberian Physical-Technical Institute, Tomsk, Russia*
- Break:** 17⁰⁰-17³⁰
- 17³⁰-17⁴⁵ **LASER-INDUCED CHANGE IN THE REFRACTIVE INDEX IN THE ORGANIC SYSTEMS DOPED WITH NANOOBJECTS**
N.V. Kamanina¹, D.P. Uskokovic²
¹*Vavilov State Optical Institute, St. Petersburg, Russia;* ²*Institute of Technical Sciences of the SASA, Belgrade, Serbia*
- 17⁴⁵-18⁰⁰ **RAMAN SPECTROSCOPY METHOD FOR DETERMINATION OF PARTICLE SIZE DISTRIBUTION IN ANATASE TiO₂ NANOPOWDERS**

M.J. Šćepanović, M.U. Grujić-Brojčin, Z.D. Dohčević-Mitrović, S. Aškračić, R. Kostić, Z.V. Popović
Center for Solid State Physics and New Materials, Institute of Physics, Belgrade, Serbia

18⁰⁰-18¹⁵ **LUMINESCENT PROPERTIES OF EUROPIUM DOPED YTTRIUM AND GADOLINIUM SESQUIOXIDE PREPARED USING POLYETHYLENE GLYCOL ASSISTED COMBUSTION METHOD**

R. Krsmanović, Ž. Andrić, M.D. Dramićanin
Institute of Nuclear Sciences "Vinca", Belgrade, Serbia

18¹⁵-18³⁰ **SYNTHESIS AND CHARACTERIZATION OF HIGH-QUALITY ORGANIC BASED MAGNETIC FLUIDS**

A. Drmota¹, A. Košak², A. Žnidaršič^{1,2}
¹*Nanotesla Institute, KOLEKTOR GROUP, Ljubljana, Slovenia*
²*Iskra-Feriti d.o.o., KOLEKTOR GROUP, Ljubljana, Slovenia*

18³⁰-18⁴⁵ **HIGH PRESSURE SINTERING OF NANOCRYSTALLINE TITANIUM CARBONITRIDE**

V.S. Urbanovich¹, G.P. Okatova², K.I. Yanushkevich¹, G.K. Zubovich¹, L.P. Stafetski³
¹*Joint Institute of Solid State and Semiconductor Physics, National Academy of Sciences of Belarus, Minsk, Belarus*, ²*Belarusian State Technological University, Minsk, Belarus*, ³*Joint-stock Neomat Co, Salaspils, Latvia*

18⁴⁵-19⁰⁰ **Fe-C BULK NANOCOMPOSITES PREPARED BY MECHANICAL ALLOYING AND MAGNETIC PULSE COMPACTION**

E. Yelsukov¹, V. Ivanov², S. Zayatz², S. Lomayeva¹
¹*Physical - Technical Institute UrB RAS, Izhevsk, Russia*
²*Institute of Electrophysics UrB RAS, Ekaterinburg, Russia*

SYMPOSIUM E: BIOMATERIALS

Friday, September 14, 2007

Session I: 09⁰⁰-12⁰⁰

Chairpersons: I. Ćosić, Dj. Koruga and J.P. Šetrajčić

- 09⁰⁰-09¹⁵ **POTENTIALITIES OF MAGNETOLIPOSOMES AS INTRACELLULAR THERANOSTICS**
S.J.H. Soenen¹, J. Cocquyt², L. DeFour¹, P. Saveyn², P. Van der Meeren², M. De Cuyper¹
¹*Interdisciplinary Research Centre, Katholieke Universiteit Leuven – Campus Kortrijk, Kortrijk, Belgium;* ²*Particle and Interfacial Technology Group, Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium*
- 09¹⁵-09³⁰ **CHEMICAL AND PHYSICAL CHARACTERIZATION OF REGULAR AND ULTRA THIN CHITOSAN FILMS STORED AT VARIOUS TEMPERATURES**
S. Živanović, J. Li, T. Wu, G. Rajpal
University of Tennessee, Knoxville, TN, USA
- 09³⁰-09⁴⁵ **NANOBIOLOGICAL ATOMIC FORCE MICROSCOPY STUDY OF THE SPORULATION OF *BACILLUS SUBTILIS***
O. Hekele¹, C.G. Goesselsberger¹, M. Brandstetter¹, R. Sommer², I.C. Gebeshuber¹
¹*Institut fuer Allgemeine Physik, Vienna University of Technology, Vienna, Austria*
²*Hygiene-Institute, Medical University of Vienna, Wien, Austria*
- 09⁴⁵-10⁰⁰ **NANOMEDICINE PERFORMED WITH THE ATOMIC FORCE MICROSCOPE ON HUMAN RED BLOOD CELLS**
O. Hekele, C.G. Goesselsberger, I.C. Gebeshuber
Institut fuer Allgemeine Physik, Vienna University of Technology, Vienna, Austria
- 10⁰⁰-10¹⁵ **SYNTHESIS AND CHARACTERIZATION OF DLPLG NANOPARTICLES FOR CONTROLLED DELIVERY OF WATER-SOLUBLE VITAMINS**
M. Stevanović¹, A. Radulović², D. Uskoković¹
¹*Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, Belgrade, Serbia;* ²*Institute of General and Physical Chemistry, Belgrade, Serbia*
- 10¹⁵-10³⁰ **GENOTOXICITY OF THE POLY-D,L-LACTIDE MICROPARTICLES ON THE HUMAN LYMPHOCYTES**
I. Jovanović, M. Petković,¹ G. Joksić², D. Uskoković¹
¹*Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, Belgrade, Serbia;* ²*Laboratory of Physical Chemistry, Institute of Nuclear Sciences „Vinča“, Belgrade, Serbia*

Break: 10³⁰-11⁰⁰

- 11⁰⁰-11¹⁵ **NONLINEAR EXCITATIONS IN Q1D STRUCTURAL POLYMER TRANSITIONS**
G. Keković¹, D. Raković¹, D. Davidović^{2,3}
¹*Faculty of Electrical Engineering, Belgrade, Serbia,* ²*Vinca Institute of Nuclear Sciences, Belgrade, Serbia,* ³*School of Electrical and Computer Engineering, RMIT University, Melbourne, Australia*
- 11¹⁵-11³⁰ **PARAMAGNETIC/DIAMAGNETIC DYNAMICS OF BIOMOLECULES-WATER COMPLEXES ON NANOTESLA SCALE**
Dj. Koruga
Department of Biomedical Engineering, Faculty of Mechanical Engineering, University of Belgrade, Belgrade, Serbia
- 11³⁰-11⁴⁵ **OBTAINING NANO CALCIUM PHOSPHATE/POLY(DL-LACTIDE-CO-GLYCOLIDE) COMPOSITE BIOMATERIAL BY SONOCHEMICAL PROCESSING**
N. Ignjatović¹, M. Dramićanin², D. Vasiljević-Radović³, D. Uskoković¹
¹*Institute of Technical Sciences of SASA, Belgrade, Serbia,* ²*Institute of Nuclear Sciences Vinca, Belgrade, Serbia,* ³*Institute of Chemistry, Technology and Metallurgy, Belgrade, Serbia*
- 11⁴⁵-12⁰⁰ **SIMILARITIES ANALYSIS ON HYDROXYAPATITE-ZIRCONIA COMPOSITES**
S.D. Bolboacă¹, L. Jäntschi²
¹*"Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania,* ²*Technical University of Cluj-Napoca, Romania*

POSTER SESSION I

Tuesday, September 11, 2007, 20³⁰-22⁰⁰

SYMPOSIUM A: ADVANCED METHODS IN SYNTHESIS AND PROCESSING OF MATERIALS

P.S.A.1. THE SYNTHESIS IN COMBUSTION MODE OF COMPLEX OXIDE FOR GAS SENSING MATERIALS

M.L. Chernega, M.V. Kuznetsov, Yu.G. Morozov

Institute of Structural Macrokinetics and Materials Science RAS, Chernogolovka, Moscow Region, Russia

P.S.A.2. THE EFFECT OF AN APPLIED ELECTRIC FIELD ON SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS OF FERRITES

S.M. Busurin, Yu.G. Morozov, M.V. Kuznetsov

Institute of Structural Macrokinetics and Materials Science RAS, Chernogolovka, Moscow region, Russia

P.S.A.3. TiO₂ COATINGS PREPARED BY SOL-GEL METHOD FOR POTENTIAL USE FOR AIR DEODORIZING

W. Mielcarek¹, I.Zareba-Głodź², K. Prociow¹, J. Warycha¹

¹*Electrotechnical Institute, Wroclaw, Poland*, ²*Wroclaw University of Technology, Wroclaw, Poland*

P.S.A.4. BIOMETIC METHOD SUITABILITY FOR PROCESSING OF TiO₂ COATINGS APPLICABLE FOR AIR DEODORIZING

W. Mielcarek, K. Prociow, J. Warycha

Electrotechnical Institute, Wroclaw, Poland

P.S.A.5. ELECTRICAL PROPERTIES OF TiO₂ THIN FILMS WITH Eu AND Pd DOPANTS PREPARED BY MAGNETRON SPUTTERING ON SILICON

E.L. Prociow, J. Domaradzki, D. Kaczmarek, T. Berlicki

Faculty of Microsystem Electronics and Photonics, Wroclaw University of Technology, Wroclaw, Poland

P.S.A.6. A STUDY OF MICROSTRUCTURAL CHANGES IN TiN THIN FILMS INDUCED BY ION IMPLANTATION

M. Popović, M. Novaković, D. Peruško, I. Radović, V. Milinović, M. Mitrić, M. Milosavljević

VINČA Institute of Nuclear Sciences, Belgrade, Serbia

- P.S.A.7. INFLUENCE OF NITROGEN ION IMPLANTATION ON THE MECHANICAL PROPERTIES OF C1045 STEEL**
D. Peruško, S. Petrović, M. Mitrić, M. Novaković, M. Popović, M. Milosavljević
Institute of Nuclear Sciences Vinca, Belgrade, Serbia
- P.S.A.8. SURFACE MODIFICATION WTi SYSTEM INDUCED BY TEA CO₂ LASER BEAM**
S. Petrović¹, B. Gaković¹, M. Trtica¹, D. Peruško¹, Š. Miljanić²
¹*Institute of Nuclear Science Vinča, Belgrade, Serbia*
²*Faculty of Physical Chemistry, Belgrade, Serbia*
- P.S.A.9. STUDY OF SUBSTRATE PRETREATMENT ON TOPOGRAPHY AND DEFECTS IN DEFECTS IN PVD-HARD COATINGS**
P. Panjan¹, M. Čekada¹, B. Gaković², M. Panjan¹, D. Kek-Merl¹, S. Paskvale¹
¹*Jožef Stefan Institute, Ljubljana, Slovenia,* ²*Vinca Institute of Nuclear Sciences, Belgrade, Serbia*
- P.S.A.10. THEORETICAL CALCULATION OF PARTITION AND THERMODYNAMIC FUNCTIONS OF B₂C AND BC₂ GAS PHASE MOLECULES**
J. Radić-Perić
Faculty of Physical Chemistry, University of Belgrade, Belgrade, Serbia
- P.S.A.11. THE INFLUENCE OF THE GAS DISCHARGE ELECTRICAL PROPERTIES ON UNIPOLAR PULSE PLASMA SYSTEM RESPONSE**
I. Popović, M. Zlatanović
Faculty of Electrical Engineering, Belgrade, Serbia
- P.S.A.12. SILICON SURFACE PROCESSING BY QUASISTATIONARY PLASMA FLOW**
I.P. Dojčinović^{1,2}, M.M. Kuraica^{1,2}, J. Purić^{1,2}
¹*Faculty of Physics, University of Belgrade, Belgrade, Serbia*
²*Center for Science and Technology Development, Belgrade, Serbia*
- P.S.A.13. INFLUENCE OF THE LASER PROCESSING PARAMETERS ON STRUCTURAL CHANGES OF SUPER ALLOY HASTELLOY**
K. Kovačević¹, A. Milosavljević², M. Srećković³, E. Počuča⁴, I. Nešić²
¹*Institute for Metallurgy, Nikšić, Montenegro,* ²*Faculty of Mechanical Engineering, Belgrade University, Serbia,* ³*Faculty of Electrical Engineering, Belgrade University, Serbia,* ⁴*“Nicola Tesla” Airport, Belgrade, Serbia*

- P.S.A.14 **THE INFLUENCE OF LASER BORONIZING ON THE SURFACE LAYERS STRUCTURE OF 500-7 NODULAR IRON**
M. Paczkowska, W. Waligóra
Institute of Machines and Motor Vehicles, Poznan University of Technology, Poznan, Poland
- P.S.A.15. **THE EFFECT OF TEMPERATURE AND ZINC CONCENTRATION ON ZINC COATINGS DEPOSITED WITH PACK CEMENTATION**
D. Chaliampalias, N. Pistofidis, G. Vourlias
Physics Department, Aristotle University of Thessaloniki, Thessaloniki, Greece
- P.S.A.16. **STUDY OF THE GROWTH MECHANISM OF ZINC HOT-DIP GALVANIZING COATINGS**
N. Pistofidis, G. Vourlias, D. Chaliampalias
Physics Department, Aristotle University of Thessaloniki, Thessaloniki, Greece
- P.S.A.17. **EXAMINATION OF THE MICROSTRUCTURAL FEATURES OF ZINC PROTECTIVE COATINGS ON LOW CARBON STEEL FORMED IN A FLUIDIZED BED REACTOR**
D. Chaliampalias, G. Vourlias, N. Pistofidis
Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece
- P.S.A.18. **FORMATION AND GROWTH OF COPPER DEPOSITS UNDER HYDROGEN CODEPOSITION**
N.D. Nikolić, Lj.J. Pavlović
ICTM – Institute of Electrochemistry, University of Belgrade, Belgrade, Serbia
- P.S.A.19. **CHARACTERIZATION OF CARBON FIBROUS MATERIALS MODIFIED BY RUBY LASER RADIATION**
J. Stašić¹, M. Srećković², B. Kaludjerović¹, S. Ristić³
¹Institute of Nuclear Sciences "Vinča", Laboratory for materials science, Belgrade, Serbia, ²Faculty of Electrical Engineering, Belgrade, Serbia, ³Military Technical Institute, Belgrade, Serbia
- P.S.A.20. **RAPID QUENCHED METAL FIBRES AND POROUS FIBROUS MATERIALS**
V.N. Antsiferov, A.A. Smetkin
Centre of Powder Materials Science of PSTU, Perm, Russia
- P.S.A.21. **PREPARATION OF Al(OH)₃ POWDER BY FIB FOR TEM INVESTIGATION**
I. Nikolić¹, V. Radmilović², T.Z. Sholklapper³, D. Blečić¹

¹University of Montenegro, Faculty of Metallurgy and Technology, Podgorica, Montenegro, ²LBNL, NCEM, MS-72, University of California, Berkeley, CA, USA, ³T.Z. Sholklapper, LBNL, MSSM, University of California, Berkeley, CA, USA

- P.S.A.22. **MASS-SPECTROMETRIC DIFFERENTIATION OF SULFUR CONTAINING, ELECTRON-RICH HETEROCYCLES**
J. Hadži-Djordjević¹, I. Cekić-Lasković¹, R. Marković^{2,3}, A. Rašović³, D. Minić^{1,3}
¹Faculty of Physical Chemistry, University of Belgrade, Serbia, ²Faculty of Chemistry, University of Belgrade, Serbia, ³Institute of Chemistry, Technology and Metallurgy, Belgrade, Serbia
- P.S.A.23. **POINT OF ZERO CHARGE AND ISOELECTRIC POINT OF ALUMINA**
J.J. Gulicovski, L.J.S. Čerović, S.K. Milonjić
The Vinča Institute of Nuclear Sciences, Belgrade, Serbia
- P.S.A.24. **STABILITY OF ZIRCONIA SOL IN THE PRESENCE OF VARIOUS INORGANIC ELECTROLYTES**
J.M. Marković¹, S.K. Milonjić¹, V. Leovac²
¹The Vinča Institute of Nuclear Sciences, Belgrade, Serbia, ²Chemistry Department, Faculty of Sciences, Novi Sad, Serbia
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I. Stojković¹, D. Jugović², M. Mitrić³, N. Cvjetičanin¹, S. Mentus¹
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- P.S.A.26. **HYDROTHERMAL SYNTHESIS OF CATHODE MATERIALS FOR LITHIUM-ION BATTERIES**
Z. Stojanović, D. Jugović, D. Uskoković
Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, Belgrade, Serbia
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S. Petrušić², S. Pašalić¹, P. Jovanić³
¹Ministry for Science, Belgrade, Serbia, ²Faculty for Technology and Metalurgy, Belgrade, Serbia, ³Institute for Plant Protection and Environment, Belgrade, Serbia
- P.S.A.28. **INNOVATIVE MATERIALS FOR H₂ STORAGE**
D. Swierczynski, S. Bennici, A. Auroux
IRCELYON, Institut de recherches sur la catalyse et l'environnement de Lyon, UMR5256, CNRS – Université Lyon 1, Villeurbanne, France

- P.S.A.29. **THE INFLUENCE OF EXCESS SODIUM CATIONS FROM LTA ZEOLITE ON HIGH TEMPERATURE CRYSTALLIZATION AND STABILITY OF LOW-CARNEGIEITE**
A. Radulović¹, D. Arandjelović¹, R. Dimitrijević², P. Vulić², V. Dondur³
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Lj. Damjanović¹, V. Rac², V. Dondur¹, R. Hercigonja¹, V. Rakić²
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S. Milovanović¹, N. Novaković¹, M. Šiljegović¹, J. Grbović Novaković¹, N. Ivanović¹
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A. Stanković, Z. Stojanović, D. Uskoković
Institute of Technical Science of the Serbian Academy of Sciences and Arts, Belgrade, Serbia
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S. Raičević, V. Stanić
Vinča Institute of Nuclear Sciences, Radiation and Environmental Protection Laboratory, Belgrade, Serbia
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N. Obradović¹, N. Labus¹, M. Mitrić², M.V. Nikolić³, M.M. Ristić⁴
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T. Stanić¹, M. Tomašević-Čanović¹, A. Živanović², A. Radosavljević-Mihajlović³, S. Milićević¹

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D. Miličević, A. Leskovac, M. Mitrić, E. Suljovrujić
Vinča Institute of Nuclear Sciences, Belgrade, Serbia

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M.B. Tošić¹, V.D. Živanović¹, N.S. Blagojević², S.R. Grujić², J.D. Nikolić¹
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V. Arsoski, R. Ramović, M. Srećković
School of Electrical Engineering, University of Belgrade, Serbia

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M.C. Jovičić, R.Ž. Radičević, J.K. Budinski-Simendić
University of Novi Sad, Faculty of Technology, Novi Sad, Serbia

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A. Vasić-Milovanović¹, P.Osmokrović², B.Lončar³, S.Stanković⁴
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P.S.A.43. SYNTHESIS OF OLIGOADDUCTS OF MALONIC ACID C₆₀

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Department of Chemistry, Faculty of Science, University of Novi Sad, Novi Sad, Serbia

P.S.A.44. CHEMICAL SYNTHESIS AND CHARACTERIZATION OF LITHIUM ORTHOSILICATE (Li₂SiO₄). CO₂ ABSORPTION CAPACITIES

V.V. Kovačević¹, B.P. Dojčinović², B.M. Obradović^{1,5}, M.M. Kuraica^{1,5}, D.D. Manojlović³, V.M. Rakić⁴

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M. Puharić, M. Kutin, J. Tanasković

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P.S.A.47. THERMAL STABILITY AND FRAGILITY PARAMETERS OF Fe-M-Al-Ga-P-C-B (M=Nb) AMORPHOUS ALLOYS

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- P.S.A.49. **TRICALCIUM ALUMINATE HEXAHYDRATE (TCA) FILTER AID IN THE BAYER INDUSTRY**
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- P.S.A.50. **AN INFLUENCE OF MICROSTRUCTURE OF SCREEN FORMED BY LASER EXPOSURE OF LIGHT-SENSITIVE FILM ON TON VALUE INCREASE IN PRINTING**
P.M. Živković, P.S. Uskoković, A. Krstić, N. Borna
Faculty of Technology and Metallurgy, University of Belgrade, Serbia
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M. Burzić, M. Kutin, M. Puharić
Institute GOŠA d.o.o., Belgrade, Serbia
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M. Krgović¹, S. Djurković¹, N. Marstijepović¹, M. Ivanović¹, R. Zejak², M. Knežević²
¹*Faculty of Metallurgy and Technology, Podgorica, Montenegro,*
²*Faculty of Civil Engineering, Podgorica, Montenegro,*
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Ž. Blečić¹, D. Blečić¹, D. Bajić², D. Čabarkapa³
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Yu.I. Vesnin
Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia
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M. Jazirehpur, A. Alizadeh
MUT University of Tehran, Iran

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MUT University of Tehran, Iran
- P.S.A.57. **STRAIGHT BORON CARBID NANORODS VIA A CARBOTHERMAL TEMPLATE ASSISTED METHOD**
M. Jazirehpur, A. Alizadeh
MUT University of Tehran, Iran
- P.S.A.58. **SYNTHESIS OF TITANIUM DIBORIDE NANOWIRES AND NANORODS VIA CARBOTHERMAL-VLS ROUTE**
M. Jazirehpur, A. Alizadeh
MUT University of Tehran, Iran
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M. Jazirehpur, A. Alizadeh
MUT University of Tehran, Iran
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M. Jazirehpur, A. Alizadeh
MUT University of Tehran, Iran
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S. Galović, D. Čevizović, M. Popović, Z. Stojanović
The Vinca Institute of Nuclear Sciences, Belgrade, Serbia
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D. Čevizović, S. Galović, Z. Ivić
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P.M. Mitrašinović, M.L. Mihajlović
Center for Multidisciplinary Studies, University of Belgrade, Belgrade, Serbia
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S. Matijašević¹, A. Daković¹, A. Stojanović¹, D. Ileš¹, G. Vitorović², B. Mitrović²
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P.S.A.65. BASIC OPTICAL MATERIALS OF FERRULE AND THEIR PERFORMANCE

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A. Maričić, A. Kalezić-Glišović, N. Mitrović, R. Simeunović, S. Djukić

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D. Veljković¹, M. Tadić^{1,2}, F.M. Peeters²
¹*Faculty of Electrical Engineering, University of Belgrade, Belgrade, Serbia*
²*Department of Physics, University of Antwerp, Groenenborgerlaan, Belgium*
- P.S.B.2. CORE-LEVEL AND VALENCE BAND STUDIES OF (GaMn)As WHISKERS**
L. Ulfat^{1,2}, J. Adell¹, J. Sadowski³, L. Ilver¹, J. Kanski¹
¹*Department of Applied Physics, Chalmers University of Technology, Göteborg, Sweden,* ²*Department of Physics University of Karachi, Karachi, Pakistan,*
³*Institute of Physics, Polish Academy of Sciences, Warszawa, Poland*
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S.J. Stanković, R.D. Ilić, D. Davidović, M. Kovačević
Vinča Institute of Nuclear Sciences, Belgrade, Serbia
- P.S.B.4. COMPOSITION DEPENDENCE OF THE DC AND AC CONDUCTIVITY OF NON-CRYSTALLINE SEMICONDUCTORS OF $\text{Cu}_x[(\text{As}_2\text{Se}_3)_{0.9}(\text{AsI}_3)_{0.1}]_{100-x}$ TYPE**
F. Skuban¹, S.R. Lukić¹, M. Slankamenac², D.M. Petrović¹
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- P.S.B.5. DEVELOPMENT OF FINE-GRAINED OXIDE CERAMICS USING PULSED COMPACTION OF LOW AGGLOMERATED NANOPOWDERS**
V.V. Ivanov
Institute of Electrophysics, UD RAS, Ekaterinburg, Russia
- P.S.B.6. SINGLE CRYSTAL ALLOYS. THERMAL FATIGUE AND CREEP.**
L.B. Getsov, E.R. Golubovskii, A.I. Rybnikov
NPO Central Boiler and Turbine Institute, St. Petersburg, Russia

- P.S.B.7. **OPTICAL AND MAGNETIC PROPERTIES OF PbTe(Ni) SINGLE CRYSTALS**
N. Romčević¹, M. Romčević¹, J. Trajić¹, W. Dobrowolski², T.A. Kuznetsova³, D.R. Khokhlov³
¹*Institute of Physics, Belgrade, Serbia*
²*Institute of Physics, Polish Academy of Sciences, Warsaw, Poland*
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- P.S.B.8. **ELECTRON STRUCTURE AND LUMINESCENCE PROPERTIES OF Ca₃Ga₂Ge₃O₁₂ GARNET CRYSTALS**
I.D. Shcherba¹, D. Uskoković², L.V. Kostyk³, L.O. Dobrjanska³, V.M. Uvarov⁴, A.J. Senkivich⁴, B.M. Jatcyk⁵
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- P.S.B.9. **REFRACTION IN 2D HEXAGONAL-LIKE PHOTONIC CRYSTALS**
Dj. Jovanović¹, R. Gajić¹, K. Hingerl²
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- P.S.B.10. **SYNTHESIS AND SANS STUDY OF POROUS ANODIC TiO₂ FILMS**
D.I. Petukhov, I.V. Kolesnik, A.A. Eliseev, A.V. Lukashin, Yu.D. Tretyakov
Department of Material Science Moscow State University, Moscow, Russia
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B. Radjenović¹, M. Radmilović-Radjenović², Z.Lj. Petrović², Ž. Nikitović²
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J. Dukić¹, S. Bošković¹, B. Matović¹, V. Kahlenberg²
¹*Institute of Nuclear Sciences „Vinča”, Materials Science Laboratory, Belgrade, Serbia*, ²*Institute of Mineralogy and Petrography, University of Innsbruck, Innsbruck, Austria*

- P.S.B.13. PHONON CONTRIBUTION IN THERMODYNAMICS OF CRYSTALLINE QUANTUM WIRES**
D.I. Ilić¹, J.P. Šetrajić², D.Lj. Mirjanić³, S.M. Vučenović³, S.K. Jaćimovski⁴, V.D. Sajfert⁵, V.M. Zorić²
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B. Cekić, A. Umićević, V. Ivanovski, V. Koteski, J. Belošević-Čavor, S. Pavlović, M. Šiljegović
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- P.S.B.15. THE EFFECTS OF POLARIZATIONAL BREMSSTRAHLUNG IN ELECTRON COLLISIONS WITH CLUSTERS**
A.R. Tančić¹, M. Davidović²
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- P.S.B.16. PREPARATION AND IR-SPECTROSCOPIC CHARACTERIZATION OF AURIVILIUS BI-LAYERED PEROVSKITE**
Z.Ž. Lazarević¹, B.D. Stojanović², M.J. Romčević¹, N.Ž. Romčević¹
¹*Institute of Physics, Belgrade, Serbia*
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M.N. Kachenjuk, A.A. Smetkin
Centre of Powder Materials Science of PSTU, Perm, Russia
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R.M. Ramović¹, S.M. Ostojić², P.M. Lukić³, R.M. Šašić²
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- P.S.B.19. ENERGY LOSS AND DEFLECTION OF FAST IONS MOVING PARALLEL TO THE GRAPHENE SHEET**
I. Radović¹, Lj. Hadžievski¹, N. Bibić¹, Z.L. Mišković²
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- P.S.B.20. INVESTIGATION OF GAMMA-RAY INDUCED CHARGE IN SILICON DIOXIDE FILMS BASED ON A STOCHASTIC MODEL**
M. Odalović, D. Petković
Faculty of Science and Mathematics, University of Pristina, Kosovska Mitrovica, Serbia
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N. Andjelić, B. Rosić, V. Milošević Mitić
Faculty of Mechanical Engineering, University of Belgrade, Belgrade, Serbia
- P.S.B.22. PARALLEL ANALYSIS OF HF MEASUREMENTS AND METHOD-OF-MOMENTS BASED ELECTROMAGNETIC SIMULATION OF LC EMI CHIP FILTERS**
M. Luković¹, O. Aleksić², V. Marić³, Lj. Živanov³
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- P.S.B.23. MOLECULAR STRUCTURE IN CORRELATION WITH ELECTROCHEMICAL PROPERTIES OF MIXED-LIGAND COBALT COMPLEXES**
V.M. Jovanović¹, K. Babić Samardžija^{2,3}, S.P. Sovilj⁴
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- P.S.B.24. ANTIFERROMAGNETIC COUPLING OF COPPER(II) IONS VIA HYDROGEN BONDING IN Cu(II) COMPLEX WITH AN ARYLPIRAZOLE LIGAND**
V. Leovac¹, V. Spasojević², V. Kusigerski², M. Joksović³, N. Lazarov², S. Novaković²
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- P.S.B.25. UPWARD PENETRATION OF GRAINS THROUGH A GRANULAR MEDIUM**

Z.M. Jakšić, S.B. Vrhovac, B. Panić, B.M. Jelenković
Institute of Physics, Zemun, Belgrade, Serbia

P.S.B.26. ON THE PREPARATION OF OPEN-FRAMEWORK MANGANESE(II)-SUBSTITUTED ALUMINOPHOSPHATE

S. Jevtić¹, N. Rajić¹, Dj. Stojaković¹, M. Mazaj², V. Kaučić²
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P.S.B.27. SYNTHESIS AND PROPERTIES OF NANO-SPINELS

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P.S.B.28. MODIFICATION OF PILLARED CLAYS WITH COBALT FUNCTIONALITY. THEIR CATALYTIC PROPERTIES

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P.S.B.29. SELF-ORGANIZING PROCESSES IN CONDENSED NANO-SYSTEMS

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P.S.B.30. CHANGES IN THE MICROSTRUCTURE OF Fe-DOPPED Gd₅Si₂Ge₂

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P.S.B.31. INVESTIGATION OF THE BEHAVIOUR OF NANOSIZED FERROMAGNETIC SOLUTIONS IN THE ELECTROMAGNETIC FIELD

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P.S.B.32. IN-SITU INORGANIC NANOPARTICLE FORMATION IN SELF-ASSEMBLED POLYELECTROLYTE MULTILAYER FILMS

M. Logar, B. Jančar, D. Suvorov
Jožef Stefan Institute, Advanced Materials Department, Ljubljana, Slovenia

- P.S.B.33. **MODELING AND SIMULATION OF THICK FILM NTC THERMISTORS BASED ON NANO-STRUCTURED MANGANITE -NiMn₂O₄**
B. Radojčić¹, O. Aleksić², R. Ramović³, S. Savić⁴
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- P.S.B.34. **CHARACTERIZATION OF BARIUM TITANATE CERAMICS BY IMPEDANCE SPECTROSCOPY**
S. Marković¹, S. Mentus², Č. Jovalekić³, D. Uskoković¹
¹*Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, Belgrade, Serbia,* ²*Faculty of Physical Chemistry, Belgrade, Serbia,* ³*Center for Multidisciplinary Studies, University of Belgrade, Belgrade, Serbia*
- P.S.B.35. **ELECTROCHEMICALLY DEPOSITED CUPROUS OXIDE AND ZINC OXIDE FILMS FOR SOLAR APPLICATION**
V. Georgieva, M. Georgieva
Faculty of Electrical Engineering and Information Technology, The "St. Cyril & Methodius" University, Skopje, Macedonia
- P.S.B.36. **ELECTROCHEMICALLY DEPOSITED ZnO THIN FILMS AND THE INFLUENCE OF HYDROGEN PLASMA ON THEIR TRANSMITTANCE**
V. Georgieva¹, J. Wienke-Ullrich², A. Tanuševski³
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- P.S.B.37. **ELECTRICAL RESISTANCE AND TERMOPHYSICAL PROPERTIES OF Sc AND Ca AT SHOCK-WAVE COMPRESSION**
D.V. Shakh-ray, V.V. Avdonin, A.A. Golyshev
Institute of Problems of Chemical Physics RAS, Chernogolovka, Russia
- P.S.B.38. **CONDUCTIVITY OF C₆₀ AND C₇₀ FULLERENES UNDER DYNAMIC SHOCK COMPRESSION**
V. Avdonin¹, D. Shakh-ray¹, A. Golyshev¹, N. Sidorov²
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- P.S.B.39. **INTRINSIC BULK CARRIER CONCENTRATION AND MOBILITY IN NANOSTRUCTURED MANGANITE AFTER POWDER ACTIVATION**
S.M. Savić¹, O.S. Aleksić², G.M. Stojanović³, M.V. Nikolić², D.T. Luković¹
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³Faculty of Technical Sciences of University of Novi Sad, Novi Sad, Serbia

P.S.B.40. **REMOVAL OF ANTIBIOTIC DOXYCYCLINE FROM WASTE WATERS BY SURFACTANT-MODIFIED ZEOLITES**

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²Hemofarm Institute, Vršac, Serbia

P.S.B.41. **SYNTHESIS AND CHARACTERIZATION OF MESOPOROUS MATERIALS OBTAINED USING FAU ZEOLITE IN THE PRESENCE OF CITRIC ACID**

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P.S.B.42. **CRYSTAL STRUCTURES OF RARE-EARTH DOPED HEXACELSIANS**

B. Nedić¹, V. Dondur¹, A. Kremenović^{2,3}, R. Dimitrijević², B. Antić³, J. Blanuša³
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P.S.B.43. **CONDUCTING NANOSTRUCTURES OF POLYANILINE DOPED WITH SULFURIC ACID**

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¹Faculty of Physical Chemistry, Belgrade, Serbia
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P.S.B.44. **SYNTHESIS OF NANOSTRUCTURED CONDUCTING POLYANILINE IN THE PRESENCE OF 3,5-DINITROSALICYLIC ACID**

A. Janošević¹, G. Ćirić-Marjanović¹, B. Simonović², M. Trchová³, P. Holler³, J. Stejskal³
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P.S.B.45. **SYNTHESIS AND CHARACTERIZATION OF THE BENZOCAINE OLIGOMERS**

D. Kosić¹, B. Marjanović², M. Trchová³, P. Holler³, G. Ćirić-Marjanović⁴
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Czech Republic, Prague, Czech Republic, ⁴Faculty of Physical Chemistry, Belgrade, Serbia

P.S.B.46. CHEMICAL OXIDATIVE OLIGOMERIZATION OF THE ETHACRIDINE LACTATE

B. Marjanović¹, I. Juranić², M. Trchová³, P. Holler³, G. Ćirić-Marjanović⁴
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P.S.B.47. RADICAL POLYMERISATION OF MONO-n-BUTYL ITACONATE

Lj. Milovanović¹, B. Mazalica², L. Katsikas², I.G. Popović²
¹*Institute of Nuclear Sciences VINČA, Belgrade, Serbia*
²*University of Belgrade, Faculty of Technology and Metallurgy, Belgrade, Serbia*

P.S.B.48. THE INFLUENCE OF RADIATION ON THERMAL STABILITY OF POLYIMIDES BASED ON N-[4-BENZOYL-2-(2,5-DIOXO-2,5-DIHYDRO-PYRROL-1-YL)-PHENYL]-ACETAMIDE

M. Marinović-Cincović¹, D. Babić¹, E. Džunuzović², K. Popov-Pergal³, M. Rančić³
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²*Faculty of Technology and Metallurgy, University of Belgrade, Belgrade, Serbia*
³*Faculty of Forestry Science, University of Belgrade, Belgrade, Serbia*

P.S.B.49. CALCULATIONS OF STRUCTURE, ELECTRONIC AND VIBRATIONAL SPECTRA OF DISILOXANE BISBENZOCYCLOBUTEN

N. Ivanović, I. Radisavljević, D. Marjanović, N. Novaković
Institute for Nuclear Sciences "VINČA", Belgrade, Serbia

P.S.B.50. EVALUATION OF MOLECULAR DYNAMICS IN ELASTOMER BLENDS BY MDSC MEASUREMENTS

M.B. Plavšić¹, N. Lazić², S. Ostojić², M. Kićanović²
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²*Institute of General and Physical Chemistry, Belgrade, Serbia*

P.S.B.51. ORGANO Bentonite-SYNTHESIS AND CHARACTERIZATION

N. Jović¹, A. Milutinović-Nikolić¹, I. Gržetić², D. Jovanović¹
¹*Institute of Chemistry, Technology and Metallurgy-Department of Catalysis and Chemical Engineering, Belgrade, Serbia, ²University of Belgrade, Faculty of Chemistry, Belgrade, Serbia*

- P.S.B.52. **SINTERING OF SILICON NITRIDE WITH Mg-EXCHANGE ZEOLITE ADDITIVE**
B. Matović, A. Šaponjić, M. Pošarac, A. Radosavljević Mihajlović, E. Volceanov, S. Bošković
Institute of Nuclear Sciences "Vinca", Materials Department, Belgrade, Serbia
- P.S.B.53. **PREPARATION OF SiALON POWDER USING DIATOMACIOUS EARTH**
A. Šaponjić, B. Matović, S. Bosković, A. Radosavljević Mihajlović
Institute of Nuclear Sciences Vinca, Materials Science laboratory, Belgrade, Serbia
- P.S.B.54. **PREPARATION OF HIGHLY POROUS SiC CERAMICS**
A. Egelja¹, A. Devečerski¹, M. Miljković², I. Pongrac¹, B. Matović¹
¹*Institute of Nuclear Sciences "Vinca", Materials Department, Belgrade, Serbia*
²*Faculty of Medicine, University of Nis, Serbia*
- P.S.B.55. **COMPUTER SIMULATION OF SiO₂ DISSOLUTION IN NaOH AQUEOUS SOLUTION**
M. Stanković, L. Pezo, B. Kovačević¹, M. Jovanović², D. Debeljković³
¹*Eng. Dept. Holding Institute of General and Physical Chemistry, Belgrade, Serbia*
²*Faculty of Technology and Metallurgy, Belgrade, Serbia*
³*Faculty of Mechanical Engineering, Belgrade, Serbia*
- P.S.B.56. **NEW OPTIMAL TECHNOLOGY FOR SMALL SECTIONS OF HSS AND SOFTWARE FOR DOCUMENTATION PROCESSING**
J. Rodič², W. Holzgruber¹, H. Holzgruber¹, A. Scheriau¹, R. Tarmann¹, R. Hartner¹
¹*INTECO – Special Melting Technologies, Bruck a.d.Mur, Austria*
²*INTECO / MINDOC C&S, Grosuplje, Slovenia*
- P.S.B.57. **AGEING EFFECT ON THE PSEUDOELASTICITY CHARACTERISTICS OF Ti-RICH TiNi SHAPE MEMORY ALLOY**
S. Narendranath S¹, G. Das³, S. Ghosh², M. Chakraborty²
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- P.S.B.58. **HIGH TEMPERATURE LOW CYCLE FATIGUE OF SUPERALLOY INCONEL 738LC**
K. Obrtlík, A. Chlupová, M. Petre nec, J. Polák
Institute of Physics of Materials AS CR, v.v.i., Brno, Czech Republic

- P.S.B.59. **DESTRUCTIVE AND NON-DESTRUCTIVE TECHNIQUES APPLIED TO THE CHARACTERIZATION OF AS-CAST MODEL STEELS WITH PARAMETRIC VARIATION OF Ni, Mn, Si AND Cr CONTENT**
J. Degmová^{1,2}, L. Debarberis¹
¹JRC-IE, Joint Research Centre, Institute for Energy, Petten, The Netherlands,
²Department of Nuclear Physics and Technology, Faculty of Electrical Engineering and Information Technology, Slovak University of Technology, Bratislava, Slovakia
- P.S.B.60. **NUMERICAL MODELLING OF DUCTILE FRACTURE INITIATION IN PRESSURE VESSEL STEEL**
D. Veljić¹, M. Rakin², Z. Cvijović², M. Zrilić², V. Grabulov³, A. Sedmak⁴
¹Montaža Ad", Belgrade, Serbia, ²Faculty of Technology and Metallurgy, Belgrade, Serbia, ³Military Technical Institute, Belgrade, Serbia, ⁴Faculty of Mechanical Engineering, Belgrade, Serbia
- P.S.B.61. **THE ANALYSIS OF MICROSTRUCTURE AND MECHANICAL PROPERTIES OF WELDED JOINTS OBTAINED WITH TWO TYPES OF CORED FILLER WIRES**
N. Bajić¹, V. Šijački-Žeravčić², M. Rakin³, D. Čikara⁴
¹Chemical Power Sources ReseArch Institute, Serbia, ²Faculty of Mechanical Engineering, Belgrade, Serbia, ³Faculty of Technology and Metallurgy, Belgrade, Serbia, ⁴Faculty of Technical Sciences, Kosovska Mitrovica, Serbia
- P.S.B.62. **MECHANICAL AND MICROSTRUCTURAL PROPERTIES OF HIGH-CARBON STEEL SURFACE WELDED LAYER**
O. Popović¹, R. Prokić-Cvetković¹, A. Sedmak¹, V. Grabulov², Z. Burzić², M. Rakin³
¹Faculty of Mechanical Engineering, University of Belgrade, Belgrade, Serbia,
²Military Technical Institute, Belgrade, Serbia, ³Faculty of Technology and Metallurgy, Belgrade, Serbia
- P.S.B.63. **THE APPLICATION OF MODERN TECHNIQUES IN SUPER ALLOYS INVESTIGATION**
A. Milosavljević¹, S. Petronić¹, V. Negovanović²
¹Faculty of Mechanical Engineering, Serbia
²Faculty of Business studies, University of Belgrade, Belgrade, Serbia
- P.S.B.64. **STUDY OF THE SIMULATED HAZ OF CREEP RESISTANT 9-12% ADVANCED CHROMIUM STEEL**
Lj. Milović¹, T. Vuherer², M. Zrilić¹, S. Putić¹
¹Faculty of Technology and Metallurgy, Beograd, Serbia
²Faculty of Mechanical Engineering, Maribor, Slovenia
- P.S.B.65. **USE OF IN-SITU SEM OBSERVATIONS FOR THE CHARACTERISATION OF FRACTURE PROCESS IN Al-Zn-Mg-Cu ALLOYS**

M. Vratnica¹, Z. Cvijović²

¹*Faculty of Metallurgy and Technology, Podgorica, Montenegro*

²*Faculty of Technology and Metallurgy, Belgrade, Serbia*

P.S.B.66. **PERFORMANCE OF ALUMINOTHERMIC RAILS WELDING
TECHNOLOGY**

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Institut „Kirilo Savić“, Beograd, Srbija

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M. Ćosić¹, M. Tadić^{1,2}, F.M. Peeters¹

¹*Department of Physics, University of Antwerp, Belgium*

²*Faculty of Electrical Engineering, University of Belgrade, Belgrade, Serbia*

P.S.C.2. VIBRATIONAL SPECTROSCOPY OF CdTe/ZnTe QUANTUM DOT SUPERLATTICES

M. Romčević¹, N. Romčević¹, A. Milutinović¹, R. Kostić¹, G. Karczewski², R. Galazka², A. Boukenter³, F. Goutaland³

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P.S.C.3. ELECTRON -ELECTRON SCATTERING IN THE ACTIVE REGION OF GaAs/AlGaAs QUANTUM CASCADE LASER IN MAGNETIC FIELD

B. Novaković¹, J. Radovanović², A. Mirčetić², V. Milanović², Z. Ikonić³, D. Indjin³

¹*Institute of Physics, Belgrade, Serbia*, ²*Faculty of Electrical Engineering, Belgrade, Serbia*, ³*Institute of Microwaves and Photonics, School of Electronic and Electrical Engineering, University of Leeds, Leeds, UK*

P.S.C.4. EELS/HRTEM CHARACTERIZATION OF PHASES OBTAINED DURING THE HYDROTHERMAL SYNTHESIS OF CaTiO₃

S. Šturm, B. Jančar, I. Bračko

Jozef Stefan Institute, Ljubljana, Slovenia

P.S.C.5. SYNTHESIS OF CdSe/MESOPOROUS SiO₂ COMPOSITES WITH NARROW PARTICLE SIZE DISTRIBUTION

I.V. Kolesnik, D.I. Petukhov, A.A. Eliseev, A.V. Lukashin, Yu.D. Tretyakov
Department of Material Science, Moscow State University, Moscow, Russia

P.S.C.6. SYNTHESIS AND CHARACTERIZATION OF BaTiO₃ NANORODS

K. Žagar, S. Šturm, M. Čeh

Jozef Stefan Institute, Ljubljana, Slovenia

- P.S.C.7. **THE $W_{18}O_{49}$ NANOWIRES USED FOR SYNTHESIS OF THE WS_2 NANOTUBES**
M. Viršek¹, M. Remškar¹, A. Jesih¹, J. Jelenc²
¹Jozef Stefan Institute, Ljubljana, Slovenia, ²Faculty of Mathematics and Physics, Department of Physics, University in Ljubljana, Slovenia
- P.S.C.8. **SCANNING PROBE MICROSCOPY OF ATOMIC AND NANO STRUCTURES**
A. Beltaos¹, R. Gajić¹, G. Isić¹, Dj. Jovanović¹, B. Novaković¹, N. Paunović¹, Z.V. Popović¹, M. Radović¹, K. Winkler²
¹Institute of Physics, Belgrade, Serbia, ²Omicron Nanotechnology GmbH, Taunusstein, Germany
- P.S.C.9. **SYNTHESIS AND CHARACTERIZATION OF SHAPED ZnS NANOCRYSTALS IN WATER IN OIL MICROEMULSIONS**
D.J. Jovanović, I.Lj. Validžić, I.A. Janković, N. Bibić, J.M. Nedeljković
Vinča Institute of Nuclear Sciences, Belgrade, Serbia
- P.S.C.10. **LOW TEMPERATURE SYNTHESIS OF DISODIUM DIMOLYBDATE**
D.J. Jovanović, I.Lj. Validžić, I.A. Janković, M. Mitrić, J.M. Nedeljković
Vinča Institute of Nuclear Sciences, Belgrade, Serbia
- P.S.C.11. **RADIOLYTIC SYNTHESIS AND CHARACTERIZATION OF PVA HIDROGEL –Au NANOCOMPOSITES**
A. Krklješ, M. Marinović-Cincović, Z. Kačarević-Popović, J.M. Nedeljković
Vinča Institute of Nuclear Science, Belgrade, Serbia
- P.S.C.12. **CHARACTERIZATION OF Au NANOPARTICLES DISPERSED IN WATER AND POLYMER MATRIX**
V.V. Vodnik, Z.V. Šaponjić, N.D. Abazović, M.I. Čomor, J.M. Nedeljković
Vinča Institute of Nuclear Sciences, Belgrade, Serbia
- P.S.C.13. **NANOSIZED SILICALITE-1 CRYSTALLIZATION – INFLUENCE OF TPA⁺**
O.A. Kovačević¹, B.T. Kovačević¹, D. Arandjelović¹, K. Andjelković³, V. Dondur², Ž.Lj. Tešić³
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²Faculty of Physical Chemistry, University of Belgrade, Serbia
³Faculty of Chemistry, University of Belgrade, Serbia
- P.S.C.14. **INVESTIGATION OF NANOSIZED SILICALITE-1 BY FTIR**

SPECTROSCOPY

B.T. Kovačević¹, O.A. Kovačević¹, D. Arandjelović¹, L. Pezo¹, V. Dondur², Ž.Lj. Tešić³

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P.S.C.15. **SYNTHESIS AND CHARACTERIZATION OF SILVER NANOPARTICLES AND COMPLEX IT'S WITH LYSINE AND ANTIBODY OF PSA AND THEIR APPLICATION IN PRODUCING DIAGNOSTIC PROSTATE CANCER KIT**

D. Zare³, A. Akbarzadeh¹, B. Mohajerani², D. Norouzian¹, M. Atyabi¹, M.R. Mehrabi¹, A. Farhangi¹, H. Ansari¹, M. Mortazavi¹, Z. Saffari¹, M. Shafiei¹

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P.S.C.16. **CHARACTERIZATION OF Eu-DOPED Zn₂SiO₄ POWDERS OBTAINED BY POLYMER INDUCED SOL-GEL SYNTHESIS**

Ž. Andrić¹, R. Krsmanović¹, M. Mitrić¹, I. Zeković¹, Lj. Djačanin², M.D. Dramićanin¹

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P.S.C.17. **SYNTHESIS AND STRUCTURE OF FERRITE POLYMER NANOCOMPOSITES**

B. Pilić, M. Maletin, V. Srdić

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P.S.C.18. **STUDY OF STRUCTURAL AND OPTICAL BEHAVIORS OF TiO₂:Eu, Pd THIN FILMS**

D. Kaczmarek, J. Domaradzki, E.L. Prociow, A. Borkowska

Faculty of Microsystem Electronics and Photonics, Wrocław University of Technology, Wrocław, Poland

P.S.C.19. **TEMPERATURE DEPENDENCE OF OXYGEN REDUCTION KINETICS ON CARBON SUPPORTED Pt NANOPARTICLES**

N.R. Elezović¹, B.M. Babić², N.V. Krstajić³, S.Lj. Gojković³, Lj.M. Vračar³

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P.S.C.20. **SYNTHESIS AND PROPERTIES OF POLYSTYRENE-CO-MALEIC ACID/Cd_{1-x}Mn_xS NANOCOMPOSITES**

D. Milivojević, B. Babić-Stojić, V. Djoković, J. Blanuša
Vinca Institute of Nuclear Sciences, Belgrade, Serbia

- P.S.C.21. **STRUCTURAL PROPERTIES OF EUROPIUM-DOPED YTTRIA OBTAINED VIA AEROSOL SYNTHESIS**
K. Marinković¹, M.E. Rabanal², L.S. Gomez², I. Martin², L. Mančić¹, O. Milošević¹
¹*Institute of Technical Sciences of Serbian Academy of Sciences and Arts, Belgrade, Serbia,* ²*Universidad Carlos III de Madrid, Leganes, Madrid, Spain*
- P.S.C.22. **OPTICAL AND ELECTRICAL PROPERTIES OF INDIUM DOPED NANOCRYSTAL ZINC OXIDE PREPARED BY SPRAY PYROLYSIS METHOD**
A. Tanuševski¹, M. Ristova¹, V. Georgieva²
¹*Institute of Physics, Faculty of Natural Sciences and Mathematics, University "Sts. Cyril and Methodius", Skopje, Macedonia,* ²*Faculty of Electrical Engineering, The "Sts. Cyril & Methodius" University, Skopje, Macedonia*
- P.S.C.23. **THE INFLUENCE OF THE CONCENTRATION AND KIND OF MODIFICATION OF MONTMORILLONITE ON PROPERTIES OF NANOCOMPOSITE COATINGS**
M. Špírková, A. Strachota, J. Brus, B. Strachotová, M. Urbanová
Institute of Macromolecular Chemistry ASCR, v.v.i., Prague, Czech Republic
- P.S.C.24. **STRUCTURE PARTICULATES OF NANOSTRUCTURED CONDENSATES OF QUASIBINARY**
O. Sobol¹, L.Ribic², L. Kynytska³
¹*National Technical University «Kharkov Polytechnical Institute», Kharkov, Ukraine,* ²*Technical Faculty, Cacak, Serbia,* ³*Institute of Surface Chemistry of NAS of Ukraine, Kiev, Ukraine*
- P.S.C.25. **CORRELATION BETWEEN THE CHANGE OF ELECTRON DENSITY STATES ON THE FERMI LEVEL AND THE RELATIVE CHANGE OF THE MAGNETIC PERMEABILITY OF THE Fe₈₁B₁₃Si₄C₂ AMORPHOUS ALLOY**
A. Maričić¹, O. Aleksić², N. Mitrović¹, D.M. Minić³
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²*Center for multidisciplinary studies of the University of Belgrade, Belgrade, Serbia*
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SYMPOSIUM D: COMPOSITES

P.S.D.1. SYNTHESIS AND MECHANICAL PROPERTIES OF BIOMORPHIC C/SiC COMPOSITES

I. Djordjević, B. Babić, D. Sekulić, B. Matović
Institute of Nuclear Sciences Vinca, Belgrade

P.S.D.2. DETERMINATIONS OF MECHANICAL PROPERTIES OF PARTIALLY CARBONIZED CARBON FIBRES AND THEIR CARBON-CARBON COMPOSITES

Lj. Milovanović, D. Sekulić, B. Kaludjerović
Institute of Nuclear Science «Vinča», Belgrade, Serbia

P.S.D.3. THE INFLUENCE OF CARBON BLACK AND SILICA FILLER ON THE PROPERTIES OF ACRYLONITRILE-BUTADIENE/ETHYLENE-PROPYLENE-ETHYLIDENENORBORNENE RUBBER BLENDS

V. Jovanović¹, J. Budinski-Simendić², S. Samardžija-Jovanović¹, G. Marković³, S. Konstantinović⁴

¹Faculty of Science, University of Pristina, Kosovska Mitrovica, Serbia, ²University of Novi Sad, Faculty of Technology, Serbia, ³Tigar, Pirot, Serbia, ⁴Faculty of Technology, Leskovac, Serbia

P.S.D.4. THE INFLUENCE OF CARBON BLACK AND WOOD FLOUR ON HIGH ENERGY RADIATION RESISTANCE OF COMPOSITES BASED ON NR/CSM RUBBER BLEND

G. Marković¹, B. Radovanović², M. Marinović-Cincović³, J. Budinski-Simendić⁴

¹Tigar, Pirot, ²Faculty of Science, Niš, ³Institute of Nuclear Science Vinča, Belgrade, ⁴Faculty of Technology, Novi Sad, Serbia

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V. Kasemi

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Institute of Physics of Materials AS CR, v. v. i., Brno, Czech Republic

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J. Jančićević¹, S. Najman², N. Beljić², M. Vukelić², N. Ignjatović³, D. Uskoković³, L.J. Djordjević¹, P. Vasiljević¹

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P.S.E.27. DESIGNING OF THE ALGINATE HYDRO GEL BEADS MORPHOLOGY USING ULTRASONIC SPRAY GELLING METHOD

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P.S.C.11

**RADIOLYTIC SYNTHESIS AND CHARACTERIZATION OF PVA HIDROGEL –Au
NANOCOMPOSITES**

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Vinča Institute of Nuclear Science, Belgrade, Serbia

The radiolytic formation of Au nanoparticles in PVA hidrogel (obtained by gamma irradiation) was investigated. The reduction of Au³⁺ ions was performed using strongly reducing species such as hydrated electrons, 2-propanol and PVA radicals. Absorption spectra of PVA hidrogel–Au nanocomposites revealed the presence of surface plasmon absorption band around 520 nm which indicated formation of Au nanoparticles. In xerogel, position of peak maxima is shifted towards longer wavelength compared to that in hidrogel due to change of the dielectric permittivity of the environment. Molecular and supermolecular structure, as well as interaction between nanoparticles and polymer matrix, were investigated by IR spectroscopy. Surface morphology of nanocomposites and the size of nanoparticles were investigated by appropriate microscopy techniques. Thermooxidative degradation of nanocomposites was compared to the degradation in nitrogen atmosphere using TG analysis.

P.S.C.12

**CHARACTERIZATION OF Au NANOPARTICLES DISPERSED IN WATER AND
POLYMER MATRIX**

V.V. Vodnik, Z.V. Šaponjić, N.D. Abazović, M.I. Čomor, J.M. Nedeljković
Vinča Institute of Nuclear Sciences, Belgrade, Serbia

Gold nanoparticles were synthesized in water using citrate as reducing agent. Absorption spectra of the obtained colloidal solutions had prominent surface plasmon absorption band peaking at 530 nm, which match well with literature data for Au particles of about 20 nm in diameter. Diameter of Au nanoparticles was precisely determined by using TEM. The gold nanoparticles were incorporated in hydrophilic polymer polyvinyl alcohol. Influence of the polymer matrix on the optical properties of Au nanoparticles as well as influence of Au nanoparticles on the thermal properties of the polymer matrix was investigated.

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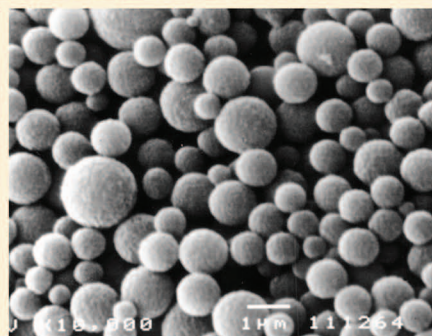
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