

GENERAL CONFERENCE PROGRAMME

Sunday, September 2 2018

08⁰⁰-19⁰⁰ **Registration**

Monday, September 3, 2018

08⁰⁰-19⁰⁰ **Registration**
09⁰⁰-10⁰⁰ **OPENING CEREMONY**
- Introduction and Welcome
Main Conference Hall

10³⁰-13⁰⁰ **First Plenary Session**, Main Conference Hall
13⁰⁰ **Photo Session**
14³⁰-19⁰⁰ **Second Plenary Session**, Main Conference Hall
19³⁰-21⁰⁰ **Cocktail Party**

Tuesday, September 4, 2018

08³⁰-13⁰⁰ **Third Plenary Session**, Main Conference Hall
14³⁰-20⁰⁰ **Fourth Plenary Session**, Main Conference Hall
20⁰⁰-22⁰⁰ **Poster Session I** (Symposium A and B1), Villa MIMOZA

Wednesday, September 5, 2018

09⁰⁰-13⁰⁰ **Symposium F**, Main Conference Hall
15⁰⁰-19⁰⁰ **Symposium G**, Main Conference Hall
20⁰⁰-22⁰⁰ **Poster Session II** (Symposium B2, C and D), Villa MIMOZA

Thursday, September 6, 2018

09⁰⁰-12⁴⁵ **First Oral Session**, Main Conference Hall
09⁰⁰-12¹⁵ **Second Oral Session**, Small Conference Hall
14⁰⁰-19⁰⁰ **Boat-trip around Boka Kotorska Bay**
20⁰⁰-22⁰⁰ **Poster Session III** (Symposiums E), Villa MIMOZA

Friday, September 7, 2018

09⁰⁰-12¹⁵ **Third Oral Session**, Main Conference Hall
09⁰⁰-12⁰⁰ **Fourth Oral Session**, Small Conference Hall
12³⁰-13⁰⁰ **Awards and Closing of the Conference**

SYMPOSIUM A: Advanced Methods in Synthesis and Processing of Materials
SYMPOSIUM B: Advanced Materials for High-Technology Application
SYMPOSIUM C: Nanostructured Materials
SYMPOSIUM D: Eco-materials and Eco-technologies
SYMPOSIUM E: Biomaterials
SYMPOSIUM F: Advanced Materials for Biomedical Applications
SYMPOSIUM G: Hybrid Interface Materials

OPENING CEREMONY

Monday, September 3, 2018

Main Conference Hall

09⁰⁰-10⁰⁰

Welcome Speech

Dragan Uskoković, President of MRS-Serbia, Belgrade, Serbia

Welcome Address

Robert Sinclair, Chair of International Advisory Board

Presentation of YUCOMAT 2017 Awards

Slobodan Milonjić, Vice President of MRS-Serbia, Belgrade, Serbia

**MRS-Serbia 2018 Award for a Lasting and Outstanding Contribution to
Materials Science and Engineering**

Organo-metallic lead iodide perovskites: a material science approach

Prof. Dr. László Forró

Laboratory of Physics of Complex Matter, Ecole Polytechnique Fédérale de Lausanne,
Switzerland

Break: 10⁰⁰-10³⁰

FIRST PLENARY SESSION

Main Conference Hall

Session I: 10³⁰-13⁰⁰

Chairpersons: Yury Gogotsi and Joseph T. Hupp

10³⁰-11⁰⁰ **Synthesis and properties of two-dimensional carbides and nitrides (MXenes)**

Yury Gogotsi

Department of Materials Science and Engineering, and A. J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, PA 19104, USA

11⁰⁰-11³⁰ **AIM-ing for single-atom precision for heterogeneous catalysts**

Joseph T. Hupp

Northwestern University Department of Chemistry Evanston, IL 60208, USA

11³⁰-12⁰⁰ **Applying chemistry to make today's best tunable millimeter wave dielectric even better**

Darrell G. Schlom

Department of Materials Science and Engineering, Cornell University, USA

12⁰⁰-12³⁰ **Ultra-high resolution study by aberration-corrected TEM of pyrochlore BZN supplying information on displacive atom-site disorder**

Knut W. Urban^{1,2}, Chun-Lin Jia^{1,2}, Hong Wang²

¹PGI-5 and Ernst Ruska Center, Research Center Juelich, Juelich/Germany; ²School of Electronic and Information Engineering and State Key Laboratory for Mechanical Behaviour of Materials, Xi'an Jiaotong University, Xi'an, China

12³⁰-13⁰⁰ **Electric field control of magnetism**

Ramamoorthy Ramesh

Department of Physics and Department of Materials Science and Engineering Lawrence Berkeley National Laboratory, University of California, Berkeley, CA 94720, USA

13⁰⁰-13³⁰ **Photo session**

Break: 13³⁰-14³⁰

SECOND PLENARY SESSION

Main Conference Hall

Session I: 14³⁰-16³⁰

Chairpersons: Knut W. Urban and Rolf Erni

- 14³⁰-15⁰⁰ **Correction of aberrations – past – present – and future perspectives**
Harald Rose
Ulm University, Ulm, Germany
- 15⁰⁰-15³⁰ **Prospects and challenges for high-resolution transmission electron microscopy**
Rafal E. Dunin-Borkowski, Lei Jin, András Kovács, Andreas Thust
Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons and Peter
Grünberg Institute, Forschungszentrum Jülich, 52425 Jülich, Germany
- 15³⁰-16⁰⁰ **High precision STEM studies of spatial strain distribution in nanostructures with correlation to properties**
Eva Olsson
Chalmers University of Technology, Eva Olsson Group, Gothenburg, Sweden
- 16⁰⁰-16³⁰ **Unconventional imaging by scanning transmission electron microscopy**
Rolf Erni, Trond Henninen, Feng Wang, Marta Bon, Debora Keller, Nabeel Ahmad,
Marta D. Rossell, Marco Campanini
Electron Microscopy Center, Empa, Swiss Federal Laboratories for Materials Science
and Technology, 8600 Dübendorf, Switzerland

Break: 16³⁰-17⁰⁰

Session II: 17⁰⁰-19⁰⁰

Chairpersons: Eva Olsson and Rafal E. Dunin-Borkowski

- 17⁰⁰-17³⁰ **Growth of wide bandgap semiconducting layers: a transmission electron microscopy study**
Bela Pecz
Institute for Technical Physics and Materials Science, Centre for Energy Research,
Hungarian Academy of Sciences, MTA EK MFA, 1121 Budapest, Konkoly-Thege M.
u. 29-33, Hungary
- 17³⁰-18⁰⁰ **The role of interface complexions on processing ceramic matrix nanocomposites**
Ruth Moshe, Rachel Marder, Wayne D. Kaplan
Department of Materials Science and Engineering, Technion - Israel Institute of
Technology, Haifa, Israel

- 18⁰⁰-18³⁰ **Sub 30 meV in a monochromated Themis Z**
Anil Yalcin
Thermo Fisher Scientific, Eindhoven, Netherlands
- 18³⁰-19⁰⁰ **High-resolution 3D crack visualization in multi-component materials and structures during mechanical loading – A novel application of X-ray microscopy**
Ehrenfried Zschech, Sven Niese¹, Kristina Kutukova, Juergen Gluch
Fraunhofer IKTS Dresden, Germany
¹now with AXO Dresden GmbH, Dresden, Germany

THIRD PLENARY SESSION

Tuesday, September 4, 2018

Main Conference Hall

Session I: 08³⁰-10³⁰

Chairpersons: Vladimir Torchilin and Robert Sinclair

- 08³⁰-09⁰⁰ **An update on advanced electron microscopy for cancer nanotechnology research**
Robert Sinclair^{1,2}, Yitian Zeng^{1,2}, Steven J. Madsen^{1,2}, Ai L. Koh¹
¹Stanford University, Department of Materials Science and Engineering, Stanford, USA; ²Stanford University, Center for Cancer Nanotechnology Excellence, Stanford, USA
- 09⁰⁰-09³⁰ **Recent developments in combination nanopreparations against cancer**
Vladimir Torchilin
Center for Pharmaceutical Biotechnology and Nanomedicine, Northeastern University, Boston, MA 02115, USA
- 09³⁰-10⁰⁰ **The future of medicine: implantable nanosensors**
Thomas J. Webster
Department Chemical Engineering; Northeastern University; USA
- 10⁰⁰-10³⁰ **Ceramic nanoparticles for advanced biomedical applications: from bone to brain**
Vuk Uskoković
University of Illinois at Chicago, USA

Break: 10³⁰-11⁰⁰

Session II: 11⁰⁰-13⁰⁰

Chairperons: Danilo Suvorov and Paul V. Braun

- 11⁰⁰-11³⁰ **Solid-state oxygen abstraction from stable oxides for energy storage materials**
Mamoru Senna
Keio University, Yokohama, Japan Faculty of Science and Technology, Hiyoshi,
Yokohama 223-8522, Japan
- 11³⁰-12⁰⁰ **High energy density electrodeposited Li and Na-ion battery electrodes**
Paul V. Braun
University of Illinois at Urbana-Champaign, Urbana, USA
- 12⁰⁰-12³⁰ **(Early actinoid metal)-boron-carbon systems: phase equilibria, crystal structures and physical properties**
Peter Rogl¹, Raimund Podloucky², Henri Noel³, Gerald Giester⁴
¹Institute of Materials Chemistry & Research, University of Vienna, A-1090 Vienna, Austria; ²Institute of Physical Chemistry, University of Vienna, A-1090 Vienna, Austria; ³Laboratoire de Chimie du Solide et Materiaux, UMR-CNRS 6226, Université de Rennes I, F-35042 Rennes, France; ⁴Institute of Mineralogy and Crystallography, University of Vienna, A-1090 Vienna, Austria
- 12³⁰-13⁰⁰ **Solid-state synthesis of lead-free (K/Na)_{0.5}Bi_{0.5}TiO₃ piezoceramics: peculiarities and their influence on the electrical properties**
Danilo Suvorov, Jakob König, Matjaž Spreitzer
Advanced Materials Department, Jožef Stefan Institute, Ljubljana, Slovenia

Break: 13⁰⁰-14³⁰

FOURTH PLENARY SESSION

Main Conference Hall

Session I: 14³⁰-17⁰⁰

Chairpersons: Richard W. Siegel and Hamish L. Fraser

- 14³⁰-15⁰⁰ **A unified computational approach for dislocation-based plasticity**
Richard LeSar, John Graham, Laurent Capolungo
Iowa State University, Department of Materials Science and Engineering, Ames, IA, USA; Ames Laboratory, Ames, IA, USA; Los Alamos National Laboratory, Los Alamos, NM, USA

- 15⁰⁰-15³⁰ **Materials characterization and integrated computational materials engineering: providing solutions for near-net shape manufacturing**
Hamish L. Fraser
Center for the Accelerated Maturation of Materials, The Ohio State University,
Columbus, USA
- 15³⁰-16⁰⁰ **On the nucleation of planar faults in single crystal Ni-base superalloys**
Gunther Eggeler
Bochum University, Ruhr, Germany
- 16⁰⁰-16³⁰ **Quo vadis quantum matter?!**
Davor Pavuna
Complex Matter Laboratory - Institute of Physics, Ecole Polytechnique Federale de
Lausanne, CH-1015 Lausanne, Switzerland
- 16³⁰-17⁰⁰ **Ultimate atom resolution**
Richard W. Siegel
Materials Science and Engineering Department, Rensselaer Polytechnic Institute,
Troy, New York 12180, USA

Break: 17⁰⁰-17³⁰

Session II: 17³⁰-20⁰⁰

Chairperson: Toshiaki Makabe and Vikram Jayaram

- 17³⁰-18⁰⁰ **Probing mechanical behaviour at small length scales: from spatially resolved toughness in Pt-Ni-Al bond coats on superalloys to small scale cantilever creep for residual life assessment**
Vikram Jayaram
Indian Institute of Science, Department of Materials Engineering, Bangalore 560012,
India
- 18⁰⁰-18³⁰ **NV centers in diamond: potentials and limitations for quantum metrology**
Karoly Holczer¹, Jason Cleveland²
¹UCLA, Department of Physics & Astronomy 475 Portola Plaza, Los Angeles, CA
90095-1547, USA; ²SomaLogic Inc. 2945 Wilderness Place Boulder, CO 80301, USA
- 18³⁰-19⁰⁰ **Metastable-watching for the structure and property of low-temperature plasmas**
Toshiaki Makabe
Keio University, Japan

19⁰⁰-19³⁰ **On the origin of high glass forming ability in metallic systems**
Emil Babić¹, Ramir Ristić², Ignacio A. Figueroa³, Damir Pajić¹, Željko Skoko¹, Krešo Zadro¹

¹Department of Physics, Faculty of Science, University of Zagreb, Zagreb, HR 10000, Croatia; ²Department of Physics, University of Osijek, Osijek, HR 31000, Croatia; ³Institute of Materials Research-UNAM, Universitaria Coyoacan, C. P. 04510 Mexico, Mexico

19³⁰-20⁰⁰ **Fundamental aspects of the use of metal hydrides in hydrogen energy and chemical current sources**

Yuriy Solonin, Valentin Dobrovolsky, Olga Ershova, Oleg Khyzhun
Institute for Problems of Materials Sciences National Academy of Sciences of Ukraine, Ukraine

SYMPOSIUM F: ADVANCED MATERIALS FOR BIOMEDICAL APPLICATIONS

Wednesday, September 5, 2018

Main Conference Hall

Session I: 09⁰⁰-10³⁰

Chairpersons: Feng-Huei Lin and Ching-Li Tseng

09⁰⁰-09³⁰ **The preparation of injectable angiogenic bone cement for femoral head avascular necrosis**

Feng-Huei Lin

Institute of Biomed Eng & Nanomed., National Health Research Institutes, Taiwan ;
Institute of Biomed Eng., National Taiwan University, Taipei, Taiwan

09³⁰-10⁰⁰ **Gelatin nanoparticles with anti-inflammatory/anti-angiogenesis agent loading for ocular disease treatment**

Ching-Li Tseng

Graduate Institute of Biomedical Materials & Tissue Engineering, College of Biomedical Engineering; Taipei Medical University, Taipei, Taiwan, ROC

10⁰⁰-10¹⁵ **High throughput generation of alginate-gelatin capsules for human osteoblast-like cells (MG63) long-term cultivation**

Jia-En Yang¹, Yi-Chia Hsieh¹, Ching-Yun Chen², Kai-Fa Teo¹, Chun-Hsu Yao^{3,4},
Cherng-Jyh Ke^{1,4}

¹China Medical University, College of Biopharmaceutical and Food Sciences, Department of Biological Science and Technology, Taichung, Taiwan; ²National Health Research Institutes, Institute of Biomedical Engineering and Nanomedicine, Miaoli, Taiwan; ³China Medical University Hospital, Biomaterial Translational Research Center, Taichung, Taiwan; ⁴China Medical University, College of Medicine, Department of Biomedical Imaging and Radiological Science, Taichung, Taiwan

10¹⁵-10³⁰ **Using continuous bioreactor system to cultivate human bone-like tissues for bone tissue engineering**

Ching-Yun Chen¹, Cherng-Jyh Ke^{2,3}, Jui-Sheng Sun^{4,5}, Feng-Huei Lin^{1,6}

¹Institute of Biomedical Engineering and Nanomedicine (I-BEN), NHRI, Taiwan; ²Biomaterials Translational Research Center, China Medical University Hospital, Taiwan; ³Department of Biological Science and Technology, China Medical University, Taiwan; ⁴Department of Orthopedics, College of Medicine, NTU, Taiwan; ⁵Department of Orthopedic Surgery, NTUH, Taiwan ; ⁶Institute of Biomedical Engineering, College of Medicine and College of Engineering, NTU, Taiwan

10³⁰-10⁴⁵ Fabrication of multilayered gold/silica/gadolinium compound core-shell particles and their properties of X-ray imaging and MRI

Yuta Shindo¹, Tomoya Inose, Takahiro Oikawa¹, Masayuki Tokunaga², Yohsuke Kubota², Kohsuke Gonda³, Yoshio Kobayashi¹

¹Ibaraki University, College of Engineering, Department of Materials Science and Engineering, Hitachi, Japan; ²Tohoku University, Graduate School of Medicine, Department of Gastroenterological Surgery, Sendai, Japan; ³Tohoku University, Graduate School of Medicine, Department of Medical Physics, Sendai, Japan

Break: 10⁴⁵-11¹⁵

Session II: 11¹⁵-13⁰⁰

Chairperson: Chien-Chung Chen and How Tseng

11⁴⁵-12¹⁵ The self-assembled, microtube array membranes (MTAM) and their applications for cancer translation

Chien-Chung Chen^{1,2,3,7}, Chee-Ho Chew¹, Wan-Ting Huang⁷, Kang-Yan Lee⁴, Po-Li Wei^{3,6}, Shih-Shin Tu^{5,6}

¹Grad Inst. Biomedical Materials and Tissue Engineering, College of Biomedical Engineering, Taipei Medical University, Taipei, Taiwan; ²Ph.D Program in Biotechnology Research and Development, Taipei Medical University, Taipei, Taiwan; ³International Ph.D. Program for Cell Therapy and Regenerative Medicine, Taipei Medical University, Taipei, Taiwan; ⁴Division of Thoracic Medicine, Taipei Medical University Shuang Ho Hospital, Taipei Medical University, Taipei, Taiwan; ⁵Division of General Surgery, Taipei Medical University Hospital, Taipei Medical University, Taipei, Taiwan; ⁶TMU Research Center of Cancer Translational Medicine, Taipei Medical University Hospital, Taipei Medical University, Taipei, Taiwan; ⁷Research & Development Dept. MTAM Tech Inc. Taipei, Taiwan

12¹⁵-12³⁰ Cornea epithelium reconstruction by a new way to engineer cell sheet

How Tseng, Chein-Cheng Tai, Yuan-Yi WU, Kun-De Lin

Taipei Medical University, Medical School, Department of Biochemistry and Molecular Cell Biology, Taipei 11031, Taiwan

12³⁰-12³⁵ Addition of porogens improved the characteristics of biodegradable implants made of poly(ϵ -caprolactone)/calcium phosphate ceramic composites

Chang-Chin Wu^{1,2}, Kai-Chiang Yang^{3,4}, Feng-Huei Lin⁵

¹Department of Orthopedics, En Chu Kong Hospital, New Taipei City, Taiwan; ²Department of Orthopedics, National Taiwan University Hospital, College of Medicine, National Taiwan University, Taipei, Taiwan; ³Department of Organ Reconstruction, Institute for Frontier Medical Sciences, Kyoto University, Kyoto, Japan; ⁴School of Dental Technology, College of Oral Medicine, Taipei Medical

University, Taipei, Taiwan; ⁵Ins. of Biomed. Eng., National Taiwan University, Taiwan

- 12³⁵-12⁴⁰ **The application of hydroxyapatite as the *Bletilla striata* polysaccharide carrier for sarcopenia treatment**
Ya-Jyun Liang¹, Jia-Yu Hong¹, Chun-Han Hou², Feng-Huei Lin¹
¹National Taiwan University, Institute of Biomedical Engineering, Taipei, Taiwan; National ²Taiwan University Hospital, Department of orthopedic surgery, Taipei, Taiwan
- 12⁴⁰-12⁴⁵ **Hydroxyapatite/gelatin particles embedding stromal cell-derived factor-1 for bone tissue engineering**
Chih Hsiang Fang¹, Yi Wen Lin¹, Jui Sheng Sun², Feng Huei Lin^{1,3}
¹Institute of Biomedical Engineering, College of Medicine and College of Engineering, National Taiwan University, Taipei 100, Taiwan; ²Department of Orthopedic Surgery, National Taiwan University Hospital, Taiwan; ³Division of Biomedical Engineering and Nanomedicine Research, National Health Research Institutes, Miaoli 350, Taiwan
- 12⁴⁵-12⁵⁰ **A novel multilayer capsule as desensitizing agent for dental hypersensitivity**
Kuo-Hui Chiu¹, Hsiu-Min Chen¹, Yuan-Yu Hsia¹, Ting-Ru Chung², Chih-Yu Shu³, Chia-Yung Lin⁴, Cherng-Jyh Ke^{1,3}
¹China Medical University, College of Biopharmaceutical and Food Sciences, Department of Biological Science and Technology, Taichung, Taiwan; ²China Medical University, College of Medicine, Department of Biomedical Imaging and Radiological Science, Taichung, Taiwan; ³China Medical University Hospital, Biomaterial Translational Research Center, Taichung, Taiwan; ⁴Taichung Hospital, Ministry of Health and Welfare, Department of Dentistry, Taichung, Taiwan
- 12⁵⁰-12⁵⁵ **Electrospun silk fibroin composite scaffold for tendon repair**
Yi-You Huang
Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan.
- 12⁵⁵-13⁰⁰ **BMP-2 and insulin delivered from plasma synthesis of carbon-based nanocarriers for bone regeneration**
Yi Wen Lin¹, Chih Hsiang Fang¹, Jui Sheng Sun², Feng Huei Lin^{1,3}
¹Institute of Biomedical Engineering, College of Medicine and College of Engineering, National Taiwan University, Taipei 100, Taiwan; ²Department of Orthopedic Surgery, National Taiwan University Hospital, Taiwan; ³Division of Biomedical Engineering and Nanomedicine Research, National Health Research Institutes, Miaoli 350, Taiwan

Break: 13⁰⁰-15⁰⁰

SYMPOSIUM G: HYBRID INTERFACE MATERIALS

Wednesday, September 5, 2018

Main Conference Hall

Session I: 15⁰⁰-16⁴⁵

Chairpersons: Kwang Ho Kim and Yeon Sik Jung

15⁰⁰-15³⁰ **Vertical alignment of BaTiO₃ nanoparticles for enhanced piezoelectric performance**

Je Moon Yun¹, Kwang Ho Kim^{1,2}

¹Global Frontier R&D Center for Hybrid Interface Materials (GFHIM), Republic of Korea; ²School of Materials Science and Engineering, Pusan National University, Republic of Korea.

15³⁰-15⁴⁵ **High performance photodetector using graphene barristor**

Byoung Hun Lee

Center for emerging electronic devices and systems (CEEDS), Korea; School of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST), Republic of Korea.

15⁴⁵-16⁰⁰ **High performance Al alloys development by simultaneous increasing strength and its trade-off properties**

Seung Zeon Han¹, Kwang Ho Kim^{2,3}

¹Computational materials department, Korea Institute of Materials Science (KIMS), Korea; ²Global Frontier R&D Center for Hybrid Interface Materials (GFHIM), Republic of Korea; ³School of Materials Science and Engineering, Pusan National University, School of Materials Science and Engineering, Korea

16⁰⁰-16¹⁵ **Improving the mechanical properties and wettability of metals by control interfacial characteristics: Study based on first-principles**

Eun-Ae Choi

Computational materials department, Korea Institute of Materials Science (KIMS), Korea

16¹⁵-16³⁰ **Hybrid materials imaging initiative: past, present and future**

Seungbum Hong

Dept. of Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST), Korea

16³⁰-16⁴⁵ **Circular double-patterning lithography using a block-copolymer template and tomic layer deposition**

Se-Hun Kwon, Kyung Mox Cho

School of Materials Science and Engineering, Pusan National University, Korea

Break: 16⁴⁵-17¹⁵

Session II: 17¹⁵-19⁰⁰

Chairpersons: Kyung Ho Shin and Se-Hun Kwon

17¹⁵-17⁴⁵ Various nanoarchitectural hybrid materials for high-performance supercapacitors

Kyung Ho Shin¹, Kwang Ho Kim^{2,3}, Je Moon Yun²

¹Technology Business Division, Korea Institute of Science and Technology (KIST), Republic of Korea; ²Global Frontier R&D Center for Hybrid Interface Materials (GFHIM), Republic of Korea; ³School of Materials Science and Engineering, Pusan National University, Republic of Korea

17⁴⁵-18⁰⁰ High-performance hybrid energy storages enabling ultrafast charging and high energy density along with robust cycle life

Jeung Ku Kang

Dept. of KAIST, 373-1 Guseong Dong, Yuseong Gu, Daejeon (305-701), Republic of Korea

18⁰⁰-18¹⁵ Thermal management by electrochemical process: thermoelectric and radiative cooling materials

Jae-Hong Lim

Department of Electrochemistry, Korea Institute of Material Science, Korea

18¹⁵-18³⁰ Solution plasma synthesized carbon-supported hybrid catalysts for energy converting systems

Oi Lun (Helena) Li

School of Materials Science and Engineering, Pusan National University, Korea

18³⁰-18⁴⁵ 3-dimensional hybrid nanostructures: novel fabrication strategies and applications

Yeon Sik Jung

Dept. of Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST), Korea

18⁴⁵-19⁰⁰ Virus: the next generation material

Jin-Woo Oh

Dept. of Nanoenergy Engineering, Pusan National University
Busan, Republic of Korea, 609-735

FIRST ORAL SESSION

Thursday, September 6, 2018

Main Conference Hall

Session I: 09⁰⁰-10⁴⁵

Chairpersons: Branko Z. Matović and Zoran Jovanović

- 09⁰⁰-09¹⁵ **Anion-mediated photophysical behaviour in a C₆₀ fullerene [3] rotaxane shuttle**
Timothy A. Barendt¹, Ilija Rašović², Maria A. Lebedeva², George A. Farrow³,
Alexander Auty³, Dimitri Chekulaev³, Igor V. Sazanovich⁴, Julia A. Weinstein³,
Kyriakos Porfyrakis², Paul D. Beer¹
¹University of Oxford, Chemistry Research Laboratory, Department of Chemistry,
Oxford, United Kingdom; ²University of Oxford, Department of Materials, Oxford,
United Kingdom; ³University of Sheffield, Department of Chemistry, Sheffield,
United Kingdom; ⁴Research Complex at Harwell, Laser for Science Facility,
Rutherford Appleton Laboratory, Didcot, United Kingdom
- 09¹⁵-09³⁰ **Synthesis and densification of monolithic nanocrystalline SiC ceramics**
Branko Z. Matović
Belgrade University, Institute for nuclear sciences Vinca, Cextreme Lab, Serbia
- 09³⁰-09⁴⁵ **First principles investigations of structural, electronic, elastic and mechanical properties of barium sulfide from standard to extreme high pressures**
Dejan Zagorac^{1,2}, Jelena Zagorac^{1,2}, Dragana Jordanov¹, Milena Rosić¹, Maria Čebela¹,
Jelena Luković^{1,2}, Branko Matović^{1,2}
¹Institute of Nuclear Sciences Vinča, Materials Science Laboratory, Belgrade
University, Belgrade, Serbia; ²Center for synthesis, processing and characterization of
materials for application in the extreme conditions-CextremeLab, Belgrade, Serbia
- 09⁴⁵-10⁰⁰ **Tuning of the stoichiometry of PLD grown SrO thin films via fluency optimization**
Zoran Jovanović^{1,2}, Matjaž Spreitzer¹, Anže Založnik³, Danilo Suvorov¹
¹Advanced Materials Department, Jožef Stefan Institute, Jamova 39, 1000 Ljubljana,
Slovenia; ²Laboratory of Physics, Vinča Institute of Nuclear Sciences, University of
Belgrade, P.O. Box 522, 11001 Belgrade, Serbia; ³Department of Low and
Intermediate Energy Physics, Jožef Stefan Institute, Jamova 39, 1000 Ljubljana,
Slovenia

10⁰⁰-10¹⁵ Conduction in calcium containing LaAlO₃ solid solutions prepared via ball milling

Martin Fabián¹, Aleksey Yaremchenko², Hristo Kolev³, Mária Kaňuchová⁴, Jaroslav Briančin¹

¹Institute of Geotechnics, Slovak Academy of Sciences, 040 01 Kosice, Slovak Republic; ²Aveiro Institute of Materials, Department of Materials and Ceramic Engineering, University of Aveiro, 3810-193 Aveiro, Portugal; ³Institute of Catalysis, Bulgarian Academy of Sciences, Acad. G. Bonchev St., Bldg. 11, 1113 Sofia, Bulgaria; ⁴Technical University of Košice, Letná 9, 04200 Košice, Slovakia

10¹⁵-10³⁰ Novel reactive infiltration process for production of fine grained Fe-Al intermetallics

Srdan Milenković, Anna Hynowska
IMDEA Materials Institute, Madrid, Spain

10³⁰-10⁴⁵ Properties of composite parts manufactured with help of LATP technology

Samoil Samak¹, Svetlana Risteska², Dijana Cvetkoska¹, Julija Gogu², Stefanija Acevska¹

¹Mikrosam A.D.

²Institute for Advanced Composites and Robotics (IACR) Prilep, Macedonia

Break: 10⁴⁵-11¹⁵

Session II: 11¹⁵-12⁴⁵

Chairpersons: Gerda Rogl and Remon Pop-Iliev

11¹⁵-11³⁰ High pressure torsion - a rapid tool for the production of high ZT skutterudites

Ramakrishnan Anbalagan¹, Ernst Bauer², Jiri Bursik³, Andriy Grytsiv⁴, Gerda Rogl⁴, Peter Rogl⁴, Michael Zehetbauer⁵

¹Institute of Atomic and Molecular Sciences, Taipei City, Taiwan, Province of China;

²Institute of Solid State Physics, TU Wien, Vienna, Austria; ³Academy of Sciences of the Czech Republic, Brno, Czech Republic; ⁴Christian Doppler Laboratory for Thermoelectricity, TU Wien, Vienna, Austria; ⁵Faculty of Physics, University of Vienna, Vienna, Austria

11³⁰-11⁴⁵ Advanced concepts for processing integral-skin multilayered cellular polymeric composites

Remon Pop-Iliev

UOIT- University of Ontario Institute of Technology Faculty of Engineering & Applied Science Canada, Canada

- 11⁴⁵-12⁰⁰ **Interaction between flow and faceted crystal growth**
Mihaela Stefan-Kharicha, Abdellah Kharicha, Andreas Ludwig, Meghuai Wu
Montanuniversitaet Leoben, Department Metallurgy, Simulation and Modelling
Metallurgical Processes, Leoben, Austria
- 12⁰⁰-12¹⁵ **Tool geometry effect on microstructure and properties of friction stir welded 5083 and 7075 aluminium alloys**
Izabela Kalembe-Rec¹, Mateusz Kopyściański¹, Damian Miara², Krzysztof Krasnowski²
¹Faculty of Metal Engineering and Industrial Computer Science, AGH University of Science and Technology, Av. Mickiewicza 30, 30-059 Krakow, Poland; ²Instytut Spawalnictwa (Institute of Welding), 16-18 Bł. Czesława Str., 44-100 Gliwice, Poland
- 12¹⁵-12³⁰ **Development of highly piezoelectric coaxial fiber for energy harvest by using thermal drawing and post-process towers**
Thinh Tam Luong, Anh Tuan Luu, Quang Van Duong, Thu Thi Nguyen, Seung Tae Choi
School of Mechanical Engineering, Chung-Ang University, Republic of Korea
- 12³⁰-12⁴⁵ **Fabrication and application of polyvinylidene fluoride (PVDF) fabric sensors for in situ health monitoring of fibrous composite structures**
Seung-Hwan Chang, Kyung-Chae Jung
Chung-Ang University, School of Mechanical Engineering, Seoul, Republic of Korea

SECOND ORAL SESSION

Small Conference Hall

Session I: 09⁰⁰-10³⁰

Chairpersons: Rosalía Cid Barreno and Smilja Marković

- 09⁰⁰-09¹⁵ **Epitaxial Fe₃O₄/La_{0.7}Ca_{0.3}MnO₃ thin film heterostructures for spintronic devices**
Rosalía Cid Barreno^{1,2}, Juan Rubio Zuazo^{1,2}, Eduardo Salas Colera^{1,2}, Germán R. Castro^{1,2}
¹SpLine CRG BM25 Beamline, European Synchrotron Radiation Facility (ESRF), 38000 Grenoble, France
²Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas (ICMM-CSIC), 28049 Madrid, Spain

- 09¹⁵-09³⁰ **Fe₃O₄-based heterostructures for semiconductor spintronics**
Iciar Arnav, Juan Rubio-Zuazo, German R. Castro
ICMM-CSIC (Instituto de Ciencia de Materiales de Madrid), Ciudad Universitaria de Cantoblanco, 28049 Madrid, Spain; BM25-SpLine, ESRF (European Synchrotron Radiation Facility), 71 Avenue Martyrs, 38000 Grenoble, France
- 09³⁰-09⁴⁵ **Synthesis of TiO₂ -WO₃ composite nanofibers by electrospinning for application in photocatalysis and fuel cells**
Vincent Otieno Odhiambo, Orsolya Kéri, Imre Miklós Szilágyi
Department of Inorganic and Analytical Chemistry, Budapest University of Technology and Economics, Hungary
- 09⁴⁵-10⁰⁰ **The new integrated process flow sheet for production of Fe-NiAl composite microgranules for the additive technology.**
Vitalii V. Sanin¹, Mikhail R. Filonov², Evgenii A. Levashov³, Yurii S. Pogozhev³, Vladimir I. Yukhvid⁴, Denis M. Ikornikov⁴
¹NUST «MISIS», Scientific-educational center "Nanomaterials and nanotechnologies", Moscow, Russia; ²NUST «MISIS», Department of Science and innovation, Moscow, Russia; ³NUST «MISIS», Division of Powder Metallurgy and Functional Coatings, Moscow, Russia; ⁴ISMAN Department SHS Melts and Cast Materials, Chernogolovka, Russia
- 10⁰⁰-10¹⁵ **Reducing the deformation temperature of AZ31 magnesium alloy through CCT approach**
Mohammad Mirghasemi, Ali Reza Eivani, Seyyed Hosein Seyedein, Hamid Reza Jafarian
School of Metallurgy and Materials Engineering,, Iran University of Science and Technology, Tehran, Iran
- 10¹⁵-10³⁰ **Eco-technology: the application of calcined waste mine overburden clay materials as cement substitution**
Pozhhan Mokhtari, Sorour Semsari Parapari, Noyan Ozkan, Mehmet Ali Gulgun
Department of Material Sciences and Nano-Engineering, Sabanci University, Tuzla, Istanbul, Turkey

Break: 10³⁰-11⁰⁰

Session II: 11⁰⁰-12¹⁵

Chairpersons: Dragana Jugović and Pozhhan Mokhtari

- 11⁰⁰-11¹⁵ **Structural and electrochemical study of lithium iron (II) pyrophosphate**
Dragana Jugović¹, Miloš Milović¹, Miodrag Mitrić², Valentin Ivanovski², Srečo Škapin³, Dragan Uskoković¹
¹Institute of Technical Sciences of SASA, Belgrade, Serbia; ²Vinča Institute of Nuclear Sciences, University of Belgrade, Belgrade, Serbia; ³Jožef Štefan Institute, Jamova 39, SI-1000 Ljubljana, Slovenia
- 11¹⁵-11³⁰ **Li₄Ti₅O₁₂. Promising anode material for Li-ion batteries synthesized via mechanochemically assisted route**
Martin Fabián¹, Markéta Žukalová², Ladislav Kavan², Vladimír Šepelák¹, Mamoru Senna³
¹Institute of Geotechnics, Slovak Academy of Sciences, 040 01 Košice, Slovak Republic; ²J. Heyrovsky Institute of Physical Chemistry, Acad. Sci. Czech Republic, 182 23 Praha, Czech Republic; ³Faculty of Science and Technology, Keio University, 223-8522, Yokohama, Japan
- 11³⁰-11⁴⁵ **CTAB- and pluronic F-127-assisted microwave processing of ZnO particles with modified morphology and optical properties**
Smilja Marković¹, Ivana Stojković-Simatović², Sanita Ahmetović², Ljiljana Veselinović¹, Stevan Stojadinović³, Vladislav Rac⁴, Srečo Škapin⁵, Dragan Uskoković¹
¹Institute of Technical Sciences of SASA, Knez Mihailova 35/IV, 11000 Belgrade, Serbia; ²University of Belgrade, Faculty of Physical Chemistry, Belgrade, Serbia; ³University of Belgrade, Faculty of Physics, Belgrade, Serbia; ⁴University of Belgrade, Faculty of Agriculture, Belgrade, Serbia; ⁵Jožef Stefan Institute, Ljubljana, Slovenia
- 11⁴⁵-12⁰⁰ **Synthesis of tribological WS₂ powder from oxide precursor**
Nataša Gajić¹, Željko Kamberović², Zoran Anđić³, Jarmila Trpčevska⁴, Beatrice Plešingerova⁴, Jovana Đokić³
¹University of Belgrade, Innovation Center of the Faculty of Technology and Metallurgy in Belgrade Ltd., Belgrade, Serbia; ²University of Belgrade, Faculty of Technology and Metallurgy, Belgrade, Serbia; ³University of Belgrade, Innovation center of Faculty of Chemistry Ltd., Belgrade, Serbia; ⁴Technical University of Košice, Faculty of Materials, Metallurgy and Recycling, Košice, Slovakia
- 12⁰⁰-12¹⁵ **Thermochemistry aspects of mechanochemistry activation of the flotation processes**
Milan M. Petrov, Marina S. Blagojev, Ljubiša D. Andrić, Dragan S. Radulović
Institute for Technology of Nuclear and other Raw Materials, Belgrade, Serbia

THIRD ORAL SESSION

Friday, September 7, 2018

Main Conference Hall

Session I: 9⁰⁰-10⁴⁵

Chairpersons: Nenad L. Ignjatović and Milena Špírková

09⁰⁰-09¹⁵ **CaP that kills: the intrinsic antimicrobial effect of calcium phosphate nanoparticles**

Victoria Wu

Advanced Materials and Nanobiotechnology Laboratory, Garage & Backyard @ Woodbridge, Irvine, CA 92604, USA

09¹⁵-09³⁰ **Cell-selective toxicity of hydroxyapatite-chitosan oligosaccharide lactate particles loaded with a steroid cancer inhibitor**

Nenad Ignjatović¹, Marija Sakač², Ivana Kuzminac², Vesna Kojić³, Smilja Marković¹, Victoria Wu⁴, Vuk Uskoković⁵, Dragan Uskoković¹

¹Institute of Technical Sciences of the Serbian Academy of Science and Arts, Knez Mihailova 35/IV, P.O. Box 377, 11000 Belgrade, Serbia; ²University of Novi Sad, Faculty of Sciences, Department of Chemistry, Biochemistry and Environmental Protection, Trg Dositeja Obradovića 3, 21000 Novi Sad, Serbia; ³University of Novi Sad, Faculty of Medicine, Oncology Institute of Vojvodina, Put Dr Goldmana 4, Sremska Kamenica 21204, Serbia; ⁴Advanced Materials and Nanobiotechnology Laboratory, Irvine, USA; ⁵Department of Bioengineering, College of Medicine and College of Engineering, The University of Illinois at Chicago, Chicago, 851 South Morgan Street, Chicago, IL 60607-7052, USA

09³⁰-09⁴⁵ **Synthesis of antimicrobial cobalt ferrite/gold nanocomposites**

Sonja Jovanović^{1,2}, Lea Udovc¹, Jelena Rmuš², Matjaž Spreitzer¹, Marija Vukomanović¹

¹Institute Jožef Stefan, Advanced Materials Department, Ljubljana, Slovenia; ²University of Belgrade, Vinca Institute of Nuclear Sciences, Laboratory of Physics, Belgrade, Serbia

09⁴⁵-10⁰⁰ **New agents for no-chemotherapy of socially significant diseases: structure and properties of nitrosile [1Fe-2S] ferredoxins mimetics – nitric oxide donors**

Nataliya A. Sanina

Russian Academy of Sciences Institute of Problems of Chemical Physics, 1, Acad. Semenov Av., 142432, Chernogolovka, Russia

- 10⁰⁰-10¹⁵ **Characterization of the TiNi surface after modified by electron beam and its effect on the morphology and cytoskeleton of mesenchymal stem cells**
Ekaterina Yu. Gudimova¹, Ludmila L. Meisner^{1,3}, Evgenii V. Yakovlev², Olga I. Shabalina^{1,3}
¹Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia;
²Institute of High Current Electronics SB RAS, Tomsk, Russia; ³National Research Tomsk State University, Tomsk, Russia
- 10¹⁵-10³⁰ **Bias voltage effect in the development of new beta/alpha-Ti-Nb-Zr biocompatible coating with low Young's modulus and high toughness for medical applications**
Emilio Frutos¹, Miroslav Karlík^{2,3}, José Antonio Jiménez⁴, Tomas Polcar^{1,5}
¹Department of Control Engineering, Faculty of Electrical Engineering, Czech Technical University in Prague, Technická 2, Prague, Czech Republic; ²Department of Materials, Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague, Trojanova 13, 120 00 Prague, Czech Republic; ³Charles University, Department of Physics of Materials, Ke Karlovu 5, 121 16 Prague, Czech Republic; ⁴Centro Nacional de Investigaciones Metalúrgicas (CENIM-CSIC), Avd. Gregorio del Amo no 8, 28040 Madrid, Spain; ⁵nCATS, University of Southampton, University Road, Southampton SO17 1BJ, United Kingdom
- 10³⁰-10⁴⁵ **Waterborne polycarbonate-based polyurethane films**
Milena Špírková, Jiří Hodan, Jana Kredatusová and Luďka Machová
Institute of Macromolecular Chemistry AS CR, Heyrovského nám. 2, 162 06 Prague 6, Czech Republic

Break: 10⁴⁵-11¹⁵

Session II: 11¹⁵-12¹⁵

Chairpersons: Jan Kusinski and Natalia Kamanina

- 11¹⁵-11³⁰ **Nanotechnology approach in optical materials modification**
Natalia Vladimirovna Kamanina
Lab for Photophysics of media with nanoobjects Vavilov State Optical Institute, Kadetskaya Liniya V.O., dom.5, korpus 2, St.- Petersburg, 199053, Russia
St.-Petersburg Electrotechnical University ("LETI"), Russia

11³⁰-11⁴⁵ **Synthesis of highly porous monolithic 3D nanomaterials based on aluminum oxides: development of methods for their functionalization using structural and chemical modification**

Anatole N. Khodan¹, Alexander G. Martynov¹, Andrei V. Bykov⁵, Yulia G. Gorbunova¹, Aslan Yu. Tsivadze¹, Mohamed R. Amamra², Andrei V Kanaev², Alexander E. Baranchikov³, Vladimir K. Ivanov³, Sergey P. Kopitsa⁴, Andrei A. Konovko⁵, Khursand E. Yorov⁶

¹A.N. Frumkin Institute of Physical Chemistry and Electrochemistry RAS (IPCE RAS) Moscow, Russia; ²Laboratoire des Sciences des Procédés et des Matériaux CNRS, Université Paris 13, Villetaneuse, France; ³N.S. Kurnakov Institute of General and Inorganic Chemistry RAS (IGIC RAS) Moscow, Russia; ⁴B.P. Konstantinov Petersburg Nuclear Physics Institute, National Research Center "Kurchatov Institute", Gatchina, Russia; ⁵M.V. Lomonosov Moscow State University, Physics Faculty, Chair of General Physics and Wave Processes, Moscow, Russia; ⁶M.V. Lomonosov Moscow State University, Department of Materials Science, Moscow, Russia

11⁴⁵-12⁰⁰ **Amorphous FeSiB ribbons crystallized by using laser interference treatment**

Jan Kusinski¹, Olaf Czyz¹, Agnieszka Radziszewska¹, Roman Ostrowski², Antoni Rycyk², Jarosław Kanak³, Małgorzata Kac⁴

¹AGH – University of Science and Technology, Faculty of Metals Engineering and Industrial Computer Science, Department of Surface Engineering and Materials Characterisation, 30 Mickiewiczza, 30-059 Krakow, Poland; ²Military University of Technology, Institute of Optoelectronics, Warsaw, 2 Gen. S. Kaliskiego, 00-908 Warsaw, Poland; ³AGH – University of Science and Technology, Faculty of Computer Science, Electronics and Telecommunications, Department of Electronics, 30 Mickiewiczza, 30-059 Krakow, Poland; ⁴Institute of Nuclear Physics Polish Academy of Sciences, ul. Radzikowskiego 152, 31-342 Krakow, Poland

12⁰⁰-12¹⁵ **Correlation methods of analysis in studies of mechanochemical reactions**

Dmitriy S. Rybin, Grigoriy N. Konygin

The Udmurt Federal Research Center of the Ural Branch of the Russian Academy of Sciences, Physical-Technical Institute, Department of Physics and Chemistry of Nanomaterials, Laboratory of Mechanoactivation of Organic Systems, Izhevsk 426001, Russia

FOURTH ORAL SESSION

Small Conference Hall

Session I: 9⁰⁰-10³⁰

Chairpersons: Aleksandr Kryshstal and Andrey V. Zadesenets

- 9⁰⁰-9¹⁵ **In situ aberration-corrected STEM of metal-induced crystallization: the case of the Ag/Ge couple**
Aleksandr Kryshstal¹, Sergiy Bogatyrenko², Alexey Minenkov², Paulo Ferreira^{3,4,5}
¹AGH University of Science and Technology, Faculty of Metals Engineering and Industrial Computer Science & International Centre of Electron Microscopy for Material Science, Krakow, Poland; ²Karazin National University, Department of Physics and Technology, Kharkiv, Ukraine; ³Iberian International Institute of Nanotechnology, Braga, Portugal; ⁴The University of Texas at Austin, Materials Science & Engineering Program, Austin, USA; ⁵University of Lisbon, Instituto Superior Técnico, Mechanical Engineering Department and IDMEC, Lisboa, Portugal
- 9¹⁵-9³⁰ **Microstructure characterization of a nanostructured austenitic steel annealed under high hydrostatic pressure**
Agnieszka T. Krawczynska¹, Stanislaw Gierlotka², Przemyslaw Suchecki¹, Daria Setman³, Boguslawa Adamczyk-Cieslak¹, Michal Gloc¹, Witold Chrominski¹, Malgorzata Lewandowska¹, Michael Zehetbauer³
¹Warsaw University of Technology, Faculty of Materials Science and Engineering, Warsaw, Poland; ²Institute of High Pressure Physics UNIPRESS, Warsaw, Poland
³University of Vienna, Faculty of Physics, Vienna, Austria
- 9³⁰-9⁴⁵ **Double complex salts as precursors of bimetallic nanoalloys**
Evgeny Y. Filatov, Andrey V. Zadesenets, Sergey V. Korenev
Nikolaev Institute of Inorganic Chemistry of Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia
- 9⁴⁵-10⁰⁰ **Oxalato-palladates of Co, Ni and Zn as precursors of nanoalloys: from thermal properties to supported catalysts**
Andrey V. Zadesenets, Ilia A. Garkul, Sergey V. Korenev
Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russian Federation
Novosibirsk State University, Novosibirsk, Russia
- 10⁰⁰-10¹⁵ **Ni-Pd/Al₂O₃ catalyst in the form of foam for dry methane reforming**
Vesna Nikolić¹, Zoran Andić², Dragana Radovanović¹, Jelena Uljarević¹, Maja Stevanović¹
¹University of Belgrade, Innovation Center of the Faculty of Technology and Metallurgy in Belgrade Ltd, Belgrade, Serbia; ²University of Belgrade, Innovation Center of the Faculty of Chemistry, Belgrade, Serbia

10¹⁵-10³⁰ **Modeling transport through an environment crowded by obstacles of different shapes and sizes**

Dijana Dujak¹, Aleksandar Karač², Ivana Lončarević³, Ljuba Budinski-Petković³, Zorica M. Jakšić⁴, Slobodan B. Vrhovac⁴

¹University of Zenica, Faculty of Metallurgy and Materials, Zenica, Bosnia and Herzegovina, ²University of Zenica, Polytechnic faculty, Zenica, Bosnia and Herzegovina, ³University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia, ⁴University of Belgrade, Institute of Physics Belgrade, Scientific Computing Laboratory, Center for the Study of Complex Systems, Belgrade, Serbia

Break: 10³⁰-11⁰⁰

Session II: 11⁰⁰-12⁰⁰

Chairpersons: Jan Grym and Ekaterina D. Grayfer

11⁰⁰-11¹⁵ **Interfaces and mechanisms: a molecular dynamics approach to fine tuning manipulation of interfaces**

Alberto Fraile¹, Hakan Yavas¹, Emilio Frutos¹, Teodor Huminiuc², Tomas Polcar^{1,2}

¹Department of Control Engineering, Czech Technical University, Czech Republic; ²Engineering Science, Faculty of Engineering and the Environment. University of Southampton, United Kingdom

11¹⁵-11³⁰ **Properties of ZnO nanorods grown in continuous-flow reactors**

Jan Grym, Roman Yatskiv, Hana Faitová, Šárka Kučerová, Nikola Bašinová, Ondřej Černohorský, Stanislav Tiagulskyi, David Roesel, Jan Vaniš

Institute of Photonics and Electronics of the CAS, Prague, Czech Republic

11³⁰-11⁴⁵ **The use of layered nanomaterials in composites with metals and their compounds**

Ekaterina D. Grayfer, Mariia N. Kozlova, Sofya B. Artemkina, Pavel A. Poltarak, Anastasiia A. Poltarak, Elena E. Plotnikova, Vladimir E. Fedorov

Nikolaev Institute of Inorganic Chemistry (NIIC) of the Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia

11⁴⁵-12⁰⁰ **Dielectric behaviour of polyimide/silica based nanocomposites at low temperatures**

Marius Andrei Olariu¹, Arcire Alexandru¹, Elena Hamciuc²

¹Gh. Asachi” Technical University, Electrical Engineering Faculty, B-dul D. Mangeron 67, Iasi-700050, Romania; ²Petru Poni” Institute of Macromolecular Chemistry, Aleea Gr. Ghica Voda 41A, 700487 Iasi, Romania

POSTER SESSION I

Tuesday, September 4, 2018, 20⁰⁰-22⁰⁰

SYMPOSIUM A: ADVANCED METHODS IN SYNTHESIS AND PROCESSING OF MATERIALS

- P.S.A.1. **Plasma assisted strategies for advanced synthesis and processing of materials**
Siavash Assadolahi^{1,2}, Daniele Benetti³, Claude Côté¹, Ryan Porter¹, Sean Wolfe¹, Fabian Ambriz Vargas³, , Diego Mantovani⁴, Andreas Ruediger³, Luc Stafford², Andranik Sarkissian¹
¹Plasmionique Inc, Varennes, QC, Canada; ²University of Montreal, QC, Canada; ³INRS-EMT, Varennes, QC, Canada, ⁴Biomaterials Engineering Unit, Saint-François d'Assise Hospital, Laval University, QC, Canada
- P.S.A.2. **Polimorphous transformations in mechanoactivated molecular crystals**
Dmitriy S. Rybin¹, Grigoriy N. Konygin¹, Kirill N. Susloparov², Alla A. Zhygalova²
¹The Udmurt Federal Research Center of the Ural Branch of the Russian Academy of Sciences, Physical-Technical Institute, Laboratory of Mechanoactivation of Organic Systems, Izhevsk, RU; ²Mezomax Inc, San Francisco, USA
- P.S.A.3. **Microstructure development of the Cu-Ti-TiB₂ composite obtained by laser sintering**
Jelena Stašić, Dušan Božić
Centre of Excellence-CextremeLab, Institute of Nuclear Sciences "Vinča", University of Belgrade, Mike Petrovića Alasa 12-14, PO Box 522, 11001 Belgrade, Serbia
- P.S.A.4. **Anomalous electron pulse annealing in Ti implanted GaP**
Zbigniew Werner¹, Marek Barlak¹, Alexey Markov², Dmitry Proskurovsky², René Heller³
¹National Centre for Nuclear Research, Otwock, Poland; ²High Current Electronics, Institute, Tomsk, Russia; ³Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany
- P.S.A.5. **The effect of nitrogen ion implantation on the properties of WC-Co composites used in wood-based materials machining**
Jacek Wilkowski¹, Marek Barlak², Roman Böttger³, Zbigniew Werner², Joanna Wachowicz¹, Paweł Czarniak¹
¹Warsaw University of Life Sciences - SGGW, Faculty of Wood Technology, Department of Mechanical Processing of Wood, Warsaw, Poland; ²National Centre for Nuclear Research Świerk - NCBJ, Plasma and Ion Technology Division (FM2),

Otwock, Poland, ³Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Ion Beam Center, Dresden, Germany

P.S.A.6. **Shungite - a russian mineral: possible application as a microwave absorber**

Nina Obradović¹, Mihajlo Gigov², Aleksandar Đorđević³, Frank Kern⁴, Svetlana Dmitrović⁵, Branko Matović⁵, Antonije Đorđević^{6,7}, Vladimir Pavlović¹

¹Institute of Technical Sciences of SASA, Knez Mihailova 35/IV, 11000 Belgrade, Serbia; ²Mining Institute Ltd., Batajnički put 2, 11080 Belgrade, Serbia; ³Faculty of Science, Department of Chemistry, Biochemistry and Environmental Protection, University of Novi Sad, Trg Dositeja Obradovica 3, 21000 Novi Sad, Serbia; ⁴Universität Stuttgart, Institut für Fertigungstechnologie keramischer Bauteile (IFKB), D- 70567 Stuttgart, Germany; ⁵University of Belgrade, Vinča Institute of Nuclear Sciences, Mike Petrovića Alasa 12-14, 11000 Belgrade, Serbia; ⁶School of Electrical Engineering, University of Belgrade, Bulevar kralja Aleksandra 73, 11000 Belgrade, Serbia; ⁷Serbian Academy of Sciences and Arts, Knez Mihailova 35, 11000 Belgrade, Serbia

P.S.A.7. **Sintering of alumina doped with different oxides, followed by sensitive dilatometer**

Suzana Filipović¹, Nina Obradović¹, Smilja Marković¹, Antonije Đorđević^{2,3}, Aleksandra Dapčević⁴, Jelena Rogan⁴, Vladimir Pavlović⁴

¹Institute of Technical Sciences of SASA, Knez Mihailova 35/IV, 11000 Belgrade Serbia; ²School of Electrical Engineering, University of Belgrade, Bulevar kralja Aleksandra 73, 11000 Belgrade, Serbia; ³Serbian Academy of Sciences and Arts, Knez Mihailova 35, 11000 Belgrade, Serbia; ⁴Faculty of Technology and Metallurgy, University of Belgrade, Karnegijeva 4, 11120 Belgrade, Serbia

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P.S.A.8. **Ni_{1-x}Mo_x dispersed alloys: synthesis and catalytic properties in 1,2-dichloroethane decomposition process**

Yuliya V. Rudneva¹, Yury V. Shubin¹, Pavel E. Plyusnin¹, Yurii I. Bauman², Ilya V. Mishakov²

¹Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia; ²Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

P.S.A.9. **The influence of the method of preparation and temperature of thermal treatment on the phase composition of the NiO-Al₂O₃ catalyst using the X-ray diffraction method**

Matilda M. Lazić.

Technical College of Applied Sciences in Zrenjanin, Zrenjanin, Serbia

- P.S.A.10. **Chalcogenides of niobium and molybdenum with stoichiometry metal: chalcogen = 2:3**
M.N. Kozlova¹, A.N. Enyashin², E.D. Grayfer¹, V.E. Fedorov¹
¹Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia; ²Institute of Solid State Chemistry UB RAS, Ekaterinburg, Russia
- P.S.A.11. **Crystallographic structure of electron pulse annealed GaP implanted with Ti**
Marek Barlak¹, Zbigniew Werner¹, Alexey Markov², Dmitry Proskurovsky², René Heller³
¹National Centre for Nuclear Research, Otwock, Poland; ²High Current Electronics Institute, Tomsk, Russia; ³Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany
- P.S.A.12. **The influence of boron on synthesis and characteristics of PM copper-zirconium alloys**
Dušan Božić, Jelena Stašić, Jovana Ružić
Centre of Excellence-CextremeLab, Institute of Nuclear Sciences “Vinča”, University of Belgrade, Mike Petrovića Alasa 12-14, PO Box 522, 11001 Belgrade, Serbia
- P.S.A.13. **Synthesis and structure of zinc(II) complex with 2-acetylpyridine - aminoguanidine**
Mirjana M. Radanović¹, Ljiljana S. Vojinović-Ješić¹, Marko V. Rodić¹, Željko K. Jačimović², Katalin Mészáros Szécsényi¹
¹University of Novi Sad, Faculty of Sciences, Department of Chemistry, Biochemistry and Environmental Protection, Novi Sad, Serbia; ²University of Montenegro, Faculty of Metallurgy and Technology, Podgorica, Montenegro
- P.S.A.14. **Influence of boron on modified characteristics of iron-based alloys with particular reference to boronizing**
Andjelka Milosavljević¹, Radica Prokić-Cvetković¹, Zoran Radaković¹, Aleksandar Jovović¹, Vuk Adžić¹, Zoran Marković²
¹ University of Belgrade, Faculty of Mechanical Engineering, Belgrade, Serbia;
² University of Belgrade, Faculty of Economics, Belgrade, Serbia

SYMPOSIUM B: ADVANCED MATERIALS FOR HIGH-TECHNOLOGY APPLICATIONS

- P.S.B.1. **Autowaves of localized plastic deformation in a material with an unstable phase structure**
Vladimir I. Danilov, Vadim V. Gorbatenko, Dina V. Orlova, Lidia V. Danilova
Institute of Strength Physics and Materials Science of Siberian Branch of Russian Academy of Sciences, Russia
- P.S.B.2. **High temperature stability of YSZ and mullite-YSZ coatings deposited by atmospheric plasma spraying**
David Jech¹, Pavel Komarov², Karel Slámečka¹, Michaela Remešová¹, Lucie Dyčková¹, Ladislav Čelko¹
¹Brno University of Technology, CEITEC – Central European Institute of Technology, Materials Characterization and Advanced Coatings, Brno, Czech Republic;
²Novosibirsk State Technical University, Faculty of Mechanical Engineering and Technologies, Novosibirsk, Russia
- P.S.B.3. **Barium-magnesium-aluminium-silicate environmental barrier coatings: powder manufacturing and plasma spraying**
Lenka Klakurková, Ladislav Čelko, David Jech, Michaela Remešová, Martin Juliš, Pavel Gejdoš, Karel Slámečka
Brno University of Technology, CEITEC, Materials Characterization and Advanced Coatings, Brno, Czech Republic
- P.S.B.4. **Magnetic and mechanical properties of nickel-based superalloy after laser induced deformation**
Andelka Milosavljević¹, Suzana Polić², Mileša Srećković³, Sanja Petronić⁴, Darko Vasiljević⁵, D.Bekrić¹, Dušan Nasradin⁵,
¹University of Belgrade, Faculty of Mechanical Engineering, Belgrade, Serbia;
²Central Institute for Conservation, Belgrade, Serbia; ³University of Belgrade, Faculty of Electrical Engineering, Belgrade, Serbia; ⁴University of Belgrade, Institute of Nuclear Science Vinca, Belgrade, Serbia; ⁵Institute of Physics, Belgrade, Serbia

- P.S.B.5. **Influence of diffusion coatings on magnetic properties of 41CrMo₄ steel**
Zina Pavloušková¹, David Jech¹, Ladislav Čelko¹, Rostislav Huzlík², Tomáš Bulín²,
Lenka Klakurková¹, Jiří Švejcar¹, Jozef Kaiser¹
¹Brno University of Technology, CEITEC, Materials Characterization and Advanced
Coatings, Brno, Czech Republic; ²Brno University of Technology, Faculty of
Electrical Engineering and Communication, Dept. of Electrical Engineering, Brno,
Czech Republic
- P.S.B.6. **Electrical and magnetic properties of multiferroic BiFeO₃-based flexible composites**
Nikola I. Ilić¹, Guilhermina F. Teixeira², Jelena D. Bobić¹, Mirjana M. Vijatović
Petrović¹, Adis. S. Džunuzović¹, Maria A. Zaghete², Biljana D. Stojanović¹
¹University of Belgrade, Institute for Multidisciplinary Research, Materials science
department, Belgrade, Serbia; ²State University of Sao Paulo, Chemistry Institute,
Araraquara, Sao Paulo, Brasil
- P.S.B.7. **Characterization of different MMC coatings deposited by PTA and FS processes**
Vesna M. Maksimović¹, Aleksandar M. Maslarević², Gordana M. Bakić³,
Miloš B. Đukić³, Bratislav M. Rajičić³, Vladimir D. Pavkov¹
¹University of Belgrade, Vinča, Institute of Nuclear Sciences, Belgrade, Serbia;
²University of Belgrade, Innovation Center, Faculty of Mechanical Engineering,
Belgrade, Serbia; ³University of Belgrade, Faculty of Mechanical Engineering,
Belgrade, Serbia
- P.S.B.8. **Determination of ceramic proppant impact on efficiency of shale gas production and the environment**
Joanna Szymanska, Pawel Wisniewski, Jaroslaw Mizera
Warsaw University of Technology, Faculty of Materials Science and Engineering,
Warsaw, Poland
- P.S.B.9. **Temperature dependence of thermal conductivity of graphene monolayer in the framework of Debay and Calawey models**
Stevo Jaćimovski¹, Dejan Raković²
¹Academy of Criminalistic and Police Studies, Belgrade, Serbia; ²University of
Belgrade, Faculty of Electrical Engineering, Serbia

POSTER SESSION II

Wednesday, September 5, 2018, 20⁰⁰-22⁰⁰

SYMPOSIUM B: ADVANCED MATERIALS FOR HIGH-TECHNOLOGY APPLICATIONS

P.S.B.10. Cup anemometer tribology and revised IEC standard

Ivan Popović, Miodrag Zlatanović

University of Belgrade, School of Electrical Engineering, Serbia

P.S.B.11. Prediction of new B₆O structures and their properties using ab initio data mining approach

Jelena Zagorac^{1,2}, Dejan Zagorac^{1,2}, Dragana Jordanov¹, Milena Rosić¹, Maria Čebela¹, Jelena Luković^{1,2}, Branko Matović^{1,2}

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P.S.B.12. Impact of thickness on properties of high-entropy and conventional metallic glasses

Ramir Ristić¹, Ahmed Kuršumović², Ignacio A. Figueroa³, Emil Babić⁴

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P.S.B.13. Crystal structure and X-Ray spectroscopic properties of R.E.2Ni12P5 compounds

Ivan D. Shcherba¹, Henrik Noga², Viktor N. Antonov³, Olga V. Zhak¹, Dragan Uskoković⁴, Bohdan M. Jatcyk⁵

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- P.S.B.14. **Study of the interaction between graphene oxide and 12-tungstophosphoric acid in their nanocomposite**
Željko Mravik¹, Danica Bajuk-Bogdanović², Smilja Marković³, Janez Kovac⁴, Ivanka Holclajtner-Antunović², Zoran Jovanović¹
¹University of Belgrade, Vinča Institute of Nuclear Sciences, Laboratory of Physics, Belgrade, Serbia; ²University of Belgrade, Faculty of Physical Chemistry, Belgrade, Serbia; ³Institute of Technical Sciences of SASA, Belgrade, Serbia; ⁴Jožef Stefan Institute, Department of Surface Engineering and Optoelectronics, Ljubljana, Slovenia
- P.S.B.15. **Transport coefficients of Ar⁺ in BF₃ gas**
Željka D. Nikitović, Vladimir D. Stojanović, Zoran M. Raspopović
Institute of Physics, University of Belgrade, Pregrevica 118, Belgrade, Serbia
- P.S.B.16. **The influence of basalt content on the properties of austenitic stainless steel 316L**
Vladimir D. Pavkov¹, Gordana M. Bakić², Vesna Maksimović¹, Branko Matović¹, Tatjana Volkov-Husović³
¹University of Belgrade, Vinca Institute of Nuclear Sciences, Belgrade, Serbia; ²University of Belgrade, Faculty of Mechanical Engineering, Belgrade, Serbia; ³University of Belgrade, Faculty of Technology and Metallurgy, Belgrade, Serbia
- P.S.B.17. **Comparative study on noble metal based nanocatalysts on different supports for low temperature fuel cells application**
Ljiljana M. Gajić Krstajić¹, Velimir R. Radmilović^{2,6}, Peter Ercius³, Borka M. Jović⁴, Vladimir D. Jović⁴, Piotr Zabinski⁵, Nevenka R. Elezović⁴
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- P.S.B.18. **Experimental Study of Drying Process of Porous Materials**
Abdulhamied Twier, ²Elhassen Ali A. Omer, ³Ramadan A. Almadani, ⁴Mustafa Jarnaz, ⁵Abdurrahman Houssein
¹Industrial Authority, Tripoli, Libya; ²Mechanical Engineering department, Engineering faculty, Zawia University, Zawia, Libya; ³Libyan Authority for Research of Natural Science and Technology, Tripoli, Libya; ⁴Libyan Academy for Higher Studies, Tripoli, Libya; ⁵Faculty of Engineering, Zintan University, Zintan, Libya

SYMPOSIUM C: NANOSTRUCTURED MATERIALS

- P.S.C.1. **Production of synthesis gas by carbon dioxide over catalytically active molybdenum based carbide and nitride nanowires**
Mrzel Aleš¹, Damjan Vengust¹, Janez Kovač¹, Venkata Dasireddy², Blaž Likozar²
¹Jozef Stefan Institute, Jamova 39, 1000 Ljubljana, Slovenia; ²National Institute of Chemistry, Hajdrihova 19, 1000 Ljubljana, Slovenia
- P.S.C.2. **Nanofibrous polyaniline preparation by the oxidative polymerization of aniline with the oxidant in excess: Raman and FTIR spectroscopy study**
Jana Mišurović, Gordana Čirić-Marjanović
University of Belgrade, Faculty of Physical Chemistry, Studentski trg 12-16, 11158 Belgrade, Serbia
- P.S.C.3. **One-pot synthesis of biocompatible NaYF₄:Yb,Er nanoparticles for cell labeling**
Ivana Dinić¹, Marina Vuković¹, Lidija Mančić², Aleksandar Krmpot³, Olivera Milošević²
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- P.S.C.4. **Shape-controlled synthesis of CeO₂ nanoparticles: effects of different precursors on the formation of oxygen vacancies**
Igor Đerd¹, Jelena Bijelić¹, Chenwei Li^{2,3}, Bernd Smarsly², Herbert Over²
¹Department of Chemistry, Josip Juraj Strossmayer University of Osijek, Cara Hadrijana 8/A, 31000 Osijek, Croatia; ²Physikalisch-Chemisches Institut, Justus-Liebig-Universität, Heinrich-Buff-Ring 17, 35392 Gießen, Germany; ³Key Laboratory for Advanced Materials, Research Institute of Industrial Catalysis, School of Chemistry and Molecular Engineering, East China University of Science and Technology, Shanghai 200237, China
- P.S.C.5. **Characterization of mechanochemically synthesized CuInS₂/ZnS nanocomposite**
Erika Dutková¹, Nina Daneu², Zdenka Bujňáková¹, Matej Baláž¹, Jaroslav Kováč³, Jaroslav Kováč Jr.³
¹Institute of Geotechnics, Slovak Academy of Sciences, 04001 Košice, Slovakia; ²Jožef Stefan Institute, Department for Nanostructured Materials, Ljubljana, SI-1000, Slovenia; ³Institute of Electronics and Photonics, Slovak University of Technology, 81219 Bratislava, Slovakia

- P.S.C.6. **Preparation and characterization of nanostructured silver supported on carbonaceous material obtained by hydrothermal carbonization process**
Branka V. Kaluđerović¹, Vesna L.J. Mandušić², Djuro M. Čokeša³, Jelena Hranisavljević², Srđan Đ Milanović¹, Zlatko L.J. Rakočević⁴
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- P.S.C.7. **Morphological, microstructural and magnetic characteristics of electrodeposited Ni-Fe-W-Cu alloy powders**
Tomislav Trišović, Miroslav Spasojević, Aleksa Maričić, Milica Spasojević
Institute of Technical Sciences of Serbian Academy of Science and Arts, Belgrade, Serbia; Joint Laboratory for Advanced Materials of SASA, Section for Amorphous Systems; Faculty of Technical Sciences, Čačak, University of Kragujevac, Čačak, Serbia; Faculty of Chemistry, University of Belgrade, Belgrade, Serbia
- P.S.C.8. **Adsorption of arsenic(III) from aqueous solution on carbon cryogel and carbon cryogel/ceria composite**
Tamara Z. Minović Arsić¹, Ana M. Kalijadis¹, Bojan M. Jokić², Milovan M. Stoiljković¹, Biljana M. Babić³
¹University of Belgrade, Vinča Institute of Nuclear Sciences, Belgrade, Serbia; ²University of Belgrade, Faculty of Applied Arts, Belgrade, Serbia; ³University of Belgrade, Institute of Physics Belgrade, Belgrade, Serbia
- P.S.C.9. **Peculiar optical features of molecular crystalline films**
Jovan P. Šetrajčić^{1,2}, Igor J. Šetrajčić¹, Ana J. Šetrajčić–Tomić³
¹University of Novi Sad, Faculty of Sciences, Department of Physics, Novi Sad, Vojvodina, Serbia; ²University “Union – Nikola Tesla”, Faculty of Sports, Novi Beograd, Vojvodina, Serbia; ³University of Novi Sad, Faculty of Medicine, Department of Pharmacy, Novi Sad, Vojvodina, Serbia

SYMPOSIUM D: ECO-MATERIALS AND ECO-TECHNOLOGIES

- P.S.D.1. **Lipid production with a high palmitoleic acid content by *Debaryomyces globosus* yeast under conditions of continuous cultivation**
Nadezda N. Stepanova¹, Grigorii I. Morgunov², Svetlana V. Kamzolova¹
¹G.K. Skryabin Institute of Biochemistry and Physiology of Microorganisms, Russian Academy of Sciences, Pushchino, Moscow region, 142290, Russia; ²Peoples' Friendship University of Russia (RUDN University), Moscow, 117198, Russia
- P.S.D.2. **New multifunctional materials based on steel slag**
Ivana Milašević¹, Ljubica Ivanović¹, Irena Nikolić^{1,2}, Dijana Đurović², Smilja Marković³, Vuk Radmilović⁴, Velimir R. Radmilović^{5,6}
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- P.S.D.3. **Biological markers of the petroleum alkane fraction as a forensic tool for determining the presence of petroleum pollutants in the environment**
Nada Vidović¹, Ivan Samelak¹, Milica Balaban¹, Mališa Antić², Tatjana Šolević-Knudsen³, Branimir Jovančićević⁴
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POSTER SESSION III

Thursday, September 6, 2018, 20⁰⁰-22⁰⁰

SYMPOSIUM E: BIOMATERIALS

- P.S.E.1. **Addition of porogens improved the characteristics of biodegradable implants made of poly(ϵ -caprolactone)/calcium phosphate ceramic composites**
Chang-Chin Wu^{1,2}, Kai-Chiang Yang^{3,4}, Feng-Huei Lin⁵
¹Department of Orthopedics, En Chu Kong Hospital, New Taipei City, Taiwan; ²Department of Orthopedics, National Taiwan University Hospital, College of Medicine, National Taiwan University, Taipei, Taiwan; ³Department of Organ Reconstruction, Institute for Frontier Medical Sciences, Kyoto University, Kyoto, Japan; ⁴School of Dental Technology, College of Oral Medicine, Taipei Medical University, Taipei, Taiwan; ⁵Ins. of Biomed. Eng., National Taiwan University, Taiwan
- P.S.E.2. **The application of hydroxyapatite as the *Bletilla striata* polysaccharide carrier for sarcopenia treatment**
Ya-Jyun Liang¹, Jia-Yu Hong¹, Chun-Han Hou², Feng-Huei Lin¹
¹National Taiwan University, Institute of Biomedical Engineering, Taipei, Taiwan; National ²Taiwan University Hospital, Department of orthopedic surgery, Taipei, Taiwan
- P.S.E.3. **Hydroxyapatite/gelatin particles embedding stromal cell-derived factor-1 for bone tissue engineering**
Chih Hsiang Fang¹, Yi Wen Lin¹, Jui Sheng Sun², Feng Huei Lin^{1,3}
¹Institute of Biomedical Engineering, College of Medicine and College of Engineering, National Taiwan University, Taipei 100, Taiwan; ²Department of Orthopedic Surgery, National Taiwan University Hospital, Taipei, Taiwan; ³Division of Biomedical Engineering and Nanomedicine Research, National Health Research Institutes, Miaoli 350, Taiwan
- P.S.E.4. **A novel multilayer capsule as desensitizing agent for dental hypersensitivity**
Kuo-Hui Chiu¹, Hsiu-Min Chen¹, Yuan-Yu Hsia¹, Ting-Ru Chung², Chih-Yu Shu³, Chia-Yung Lin³, Cherng-Jyh Ke^{1,3}
¹China Medical University, College of Biopharmaceutical and Food Sciences, Department of Biological Science and Technology, Taichung, Taiwan; ²China Medical University, College of Medicine, Department of Biomedical Imaging and Radiological Science, Taichung, Taiwan; ³China Medical University Hospital, Biomaterial Translational Research Center, Taichung, Taiwan; ⁴Taichung Hospital, Ministry of Health and Welfare, Department of Dentistry, Taichung, Taiwan

- P.S.E.5. **Electrospun silk fibroin composite scaffold for tendon repair**
Yi-You Huang
Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan.
- P.S.E.6. **BMP-2 and insulin delivered from plasma synthesis of carbon-based nanocarriers for bone regeneration**
Yi Wen Lin¹, Chih Hsiang Fang¹, Jui Sheng Sun², Feng Huei Lin^{1,3}
¹Institute of Biomedical Engineering, College of Medicine and College of Engineering, National Taiwan University, Taipei 100, Taiwan; ²Department of Orthopedic Surgery, National Taiwan University Hospital, Taiwan; ³Division of Biomedical Engineering and Nanomedicine Research, National Health Research Institutes, Miaoli 350, Taiwan
- P.S.E.7. **Rare earth dual-doped multifunctional hydroxyapatite particles for potential application in preventive medicine**
Nenad Ignjatović¹, Lidija Mančić¹, Zoran Stojanović¹, Marko Nikolić², Srečo Škapin³, Ljiljana Veselinović¹, Dragan Uskoković¹
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- P.S.E.8. **The processing and application of modified dental composites and dental inserts based on Mg-doped HAP**
Đorđe Veljović¹, Tamara Matic¹, Giama Ayoub¹, Maja Ležaja Zebić², Vesna Miletić², Rada Petrović¹, Đorđe Janačković¹
¹University of Belgrade, Faculty of Technology and Metallurgy, Department of Inorganic Chemical Technology, Karnegijeva 4, 11120 Belgrade, Serbia, ²University of Belgrade, School of Dental Medicine, DentalNet Research Group, Rankeova 4, Belgrade, Serbia.
- P.S.E.9. **Hybrid dental composites with improved mechanical properties**
Abdulsalam. A. Elmadani¹, Ivana M. Radović², Marija N. Radojević¹, Miloš Petrović¹, Dušica B. Stojanović¹, Petar S. Uskoković¹, Vesna J. Radojević¹
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- P.S.E.10. **Biomimetic evaluation of novel β -TCP/alginate macroporous scaffolds in perfusion bioreactors for potential in bone tissue engineering**
Nataša Stanojević, Milica Andrejević, Jovana Zvicer, Jasmina Stojkovska, Đorđe Veljović, Bojana Obradović
University of Belgrade, Faculty of Technology and Metallurgy, Belgrade, Serbia
Innovation Center of the Faculty of Technology and Metallurgy, Belgrade, Serbia

- P.S.E.11. **The morphology of the osteoporotic rabbit bone after implantation of strontium doped biphasic ceramic**
Mara Pilmane¹, Iize Salma², Girts Salms², Janis Locs³
¹Institute of Anatomy and Anthropology; ²Institute of Stomatology, Riga Stradins University; ³R.Cimdins Centre for Biomaterial Innovation and Development, Riga, Latvia
- P.S.E.12. **Spider silk coated with maghemite nanoparticles-synthesis and characterization**
Svetlana Dmitrović¹, Vojislav Spasojević¹, Goran Branković², Georgios Constantinides³, Aleksandra Zarubica⁴, Branko Matović¹
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- P.S.E.13. **Cefazolin-loaded polycaprolactone fibers produced via blend and co-axial electrospinning**
Andela N. Radisavljević¹, Dušica B. Stojanović², Srdan D. Perišić¹, Vesna J. Radojević², Mirjana D. Rajilić-Stojanović², Petar S. Uskoković²
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- P.S.E.14. **In silico simulation of carvedilol absorption from oral films and nanofibers**
Marija N. Radojević¹, Sandra V. Cvijić², Dušica B. Stojanović¹, Svetlana R. Ibrić², Petar S. Uskoković¹
¹University of Belgrade - Faculty of Technology and Metallurgy, Department of Materials Science and Engineering, Karnegijeva 4, 11120 Belgrade, Serbia; ²University of Belgrade - Faculty of Pharmacy, Department of Pharmaceutical Technology and Cosmetology, Vojvode Stepe 450, 11221 Belgrade, Serbia
- P.S.E.15. **Stability of the magnetite particles dispersed in different surfactans using wet stirred media milling**
Zdenka Bujňáková¹, Erika Dutková¹, Erika Tóthová¹, Jozef Kováč², Matej Baláž¹
¹Institute of Geotechnics, Slovak Academy of Sciences, Watsonova 45, 04001 Košice, Slovakia; ²Institute of Experimental Physics, Slovak Academy of Sciences, Watsonova 47, 04001 Košice, Slovakia

- P.S.E.16. **Electrochemical characterization of Mg-Zn bulk materials prepared by powder metallurgy method**
Pavel Doležal¹, Michaela Krystýnová², Jozef Minda¹, Stanislava Fintová¹, Matěj Březina¹, Josef Zapletal¹, Jaromír Wasserbauer²
¹Brno University of Technology, Faculty of Chemistry, Materials Research Centre, Purkynova 464/118, 612 00 Brno, Czech Republic; ²Brno University of Technology, Faculty of Mechanical Engineering, Institute of Materials Science and Engineering, Technická 2896/2, 616 69 Brno, Czech Republic
- P.S.E.17. **Improvement of biocompatibility by formation of nanotubular oxide layer on the ultrafine-grained Ti-13Nb-13Zr alloy**
Veljko R. Đokić¹, Dragana R. Barjaktarević¹, Đorđe N. Veljović¹, Ivana D. Dimić¹, Vesna V. Kojić², Marko P. Rakin¹
¹University of Belgrade, Faculty of Technology and Metallurgy, 11120 Belgrade, Serbia; ²University of Novi Sad, Faculty of Medicine, Oncology Institute of Vojvodina, 21204 Sremska Kamenica, Serbia
- P.S.E.18. **The longterm chemical degradation of magnesium alloy AZ31 and AZ61 processed by method squeeze casting in SBF solution**
Helena Doležalová Weissmannová¹, Ivana Ročňáková², Pavel Doležal^{2,3}
¹Brno University of Technology, Faculty Chemistry, Institute of Chemistry and Technology of Environmental Protection, Brno, Czech Republic; ²Brno University of Technology, Faculty of Mechanical Engineering, Institute of Materials Science and Engineering, Dept. of Metal Materials, Brno, Czech Republic; ³Brno University of Technology, Faculty Chemistry Materials Research Centre (MRC), Brno, Czech Republic
- P.S.E.19. **Crystal structures of mixed chloride-azide zinc (II) and chloride-isocyanate cadmium (II) complexes with the condensation product of 2-quinolinecarboxaldehyde and girard's reagent**
Tanja Keškić¹, Milica Milenković¹, Božidar Čobeljić¹, Dušanka Radanović², Katarina Anđelković¹
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