



ACADEMY OF SCIENCES AND ARTS OF THE REPUBLIC OF SRPSKA



**XV МЕЂУНАРОДНИ НАУЧНИ СКУП
САВРЕМЕНИ МАТЕРИЈАЛИ 2022**

ПРОГРАМ РАДА

**XV INTERNATIONAL SCIENTIFIC CONFERENCE
CONTEMPORARY MATERIALS 2022**

PROGRAMME

Бања Лука, 8 – 9. септембар 2022. године
Banja Luka, September 8th to 9th, 2022



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ОРГАНИЗАТОР НАУЧНОГ СКУПА
Академија наука и умјетности Републике Српске

СУОРГАНИЗАТОРИ
Alma Mater Europaea
Технички универзитет Габрово

ПОКРОВИТЕЉ НАУЧНОГ СКУПА
*Министарство за научнотехнолошки развој,
високо образовање и информационо друштво*

ОДРЖАВАЊЕ СКУПА СУ ПОМОГЛИ
МХ Електропривреда Републике Српске
Универзитетски Клинички центар Републике Српске
Комора доктора медицине РС

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ORGANIZER OF THE CONFERENCE

Academy of Sciences and Arts of the Republic of Srpska

COORGANIZERS

*Alma Mater Europaea
Technical University of Gabrovo*

UNDER THE PATRONAGE OF

*Ministry for Scientific and Technological Development,
Higher Education and Information Society*

THE SCIENTIFIC CONFERENCE HAS BEEN SUPPORTED BY

*Mixed Holding Power Utility of Republic of Srpska
University Clinical Center of Republic of Srpska
The Republic of Srpska Medical Association*

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Academician Rajko Kuzmanović
Srđan Rajčević, MSc
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Prof. Saša Vujnović, Ph.D.

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Prof. Pero Dugić, Ph.D. (Banja Luka)
Prof. Dubravka Marković, Ph.D. (Serbia)

ЧЕТВРТАК, 8. СЕПТЕМБАР 2022. ГОДИНЕ

- Долазак и смјештај пленарних предавача у хотелу „Босна” у Бањој Луци
- Долазак и смјештај учесника научног скупа који живе изван Бање Луке у хотелима по избору

ПЕТАК, 9. СЕПТЕМБАР 2022. ГОДИНЕ

- 08.30 Регистрација учесника научног скупа (АНУРС)
- 09.00 Отварање конференције
- 09.20 Пленарна предавања
- 13.30 Постер презентације
- 14.30 Дискусија
- Затварање конференције

THURSDAY, SEPTEMBER 8, 2022

- Arrival of the plenary speakers and accommodation in the hotel „Bosna” in Banja Luka
- Arrival of the participants and accommodation in the hotels optionally

FRIDAY, SEPTEMBER 9, 2022

- 08.30 Registration of the participants in the ASARS
09.00 Opening of the Conference
09.20 Plenary session
13.30 Poster presentations
14.30 Discussion
Closing ceremony

ПЕТАК, 9. СЕПТЕМБАР 2022. ГОДИНЕ

FRIDAY, SEPTEMBER 9, 2022

СВЕЧАНО ОТВАРАЊЕ СКУПА

OPENING CEREMONY

(09.00 – 09.20)

- Скуп ће отворити и учеснике поздравити академик Рајко Кузмановић, председник АНУРС-а
Academician Rajko Kuzmanović, president of ASARS will give an opening speech
- Поздравни говор министра за научнотехнолошки развој, високо образовање и информационо друштво
мр Срђана Рајчевића

Welcome speeches – Minister of Scientific and Technological Development, Higher Education and Information Society, Srđan Rajčević, MA

Поздравно обраћање гостију
Welcome speeches of the guests

РАДНИ ДИО СКУПА
WORKING SESSION
(09.20 – 15.00)

ПЛЕНАРНА ПРЕДАВАЊА
PLENARY SESSION
(09.20 – 13.20)

- 9.20 – 9.40 Tomislav Pavlović
Contemporary Achievements in Solar Energy
- 9.40 – 10.00 Nenad Filipović
*Coupled Agent Based and Finite Element Method for
Plaque Development in the Carotid Artery*
- 10.00 – 10.20 Đendi Vaštag
Corrosion Protection of Metals Using Inhibitors
- 10.20 – 10.40 Stevo Najman
*Application of Biomaterials in Regenerative Medicine –
Concepts and Perspectives*
- 10.40 – 11.00 Branko Dragović
*A Modern View of the State of Matter and Energy in the
Universe*
- 11.00 – 11.20 Coffee Break
- 11.20 – 11.40 Miroslava Živković
Bioethics and the Challenges of the Present Age
- 11.40 – 12.00 Saša Zeljković
*A Review of Recent Development of the Solvent-Deficient
Method*

- 12.00 – 12.20 Duško Dudić
Photodielectric Characterization of Light-Driven Micro/Nano Motors in Liquid Medium
- 12.20 – 12.40 Svetlana Stevović
Contaminating Substances as the Main Concept for Defining Quality and Water Management in Modern Systems
- 12.40 – 13.00 Jovan Vojinović
Remineralization of Tooth Enamel, Yesterday, Today, Tomorrow
- 13.00 – 13.20 Predrag Dašić
Analysis of Digital Development Indicators as a Condition for the Effective Application of Industry 4.0 Concept

ПОСТЕР ПРЕЗЕНТАЦИЈЕ

POSTER SESSION

1. Tijana Šušteršič, Jelena Marković, Aleksandar Atanasijević, Andreja Živić, Nenad Filipović
SGABU Platform – Integrated Platform for Biomedical Datasets and Multiscale Models
2. Elisaveta Doncheva, Martin Petreski
A Review of Nanoparticle Effects on Aluminum Alloys and Weldability
3. Igor Hut, Branislava Jeftić, Lidija Matija, Đuro Koruga
Computer Aided Diagnostic System for Whole Slide Image of Liquid Based Cervical Cytology Sample Classification Using Convolutional Neural Network
4. Ivana Stanković (Mileusnić), Branislava Jeftić, Jovana Šakota-Rosić, Lidija Matija, Đuro Koruga
Spectroscopic Analysis of Polymer Nanocomposite Materials for Optical Aids
5. Teodora Tomović, Dijana Jelić, Aleksandra Šmitran
Distinction Surfactant-coating Influences Antimicrobial Activity of Inorganic Nanoparticles: A Case Study of Selenium Nanoparticles
6. Gorana Mrđan, Dušan Mijin, Jelena Lađarević, Đendi Vaštag, Suzana Apostolov, Borko Matijević
Study of Solvatochromic Properties of Selected Aryl Azo Pyridone Dyes

7. Suzana Apostolov, Ivana Stojiljković, Đendi Vaštag
QSRR Descriptors as a Tool in the Atudy of the Barbituric Acid Derivatives' Biological Profile
8. Mileša Srećković, Aco Janicijević, Milovan Janičijević, Slađana Pantelić, Zoran Nedić, Zoran Fidanovski, Suzana Polić
Materials, New Technological Trends, Interactions Modeling and the Quantum Generators-Laser Role Today
9. Elisaveta Doncheva, Aleksandra Krstevska
Nano-Engineered Steels: Properties and Application
10. Raul Turmanidze, Predrag Dašić, Giorgi Popkhadze
Review of the Development of Micro-Drilling of Modern Composite and Nano-Materials
11. Zoran Petrović, Ana Đokić, Pero Dugić, Dragana Kešelj, Nebojša Vasiljević, Marija Jevtić
Bleaching of Rapeseed Oil with Bentonite Powder Activated with Hydrochloric Acid
12. Zoran Petrović, Jelena Mihajlović, Tatjana Botić, Pero Dugić, Dragica Lazić, Aleksandar Čebić
Investigation of the Bleaching Effects of Sunflower Oil with Synthetic Zeolite
13. Jovan Šetrajčić, Stevo Jaćimovski, Siniša Vučenović, Jelena Lamovec, Goran Jovanov
Phonon Specific Heat Capacity of Monolayer Graphene
14. Jovan Šetrajčić, Siniša Vučenović, Igor Šetrajčić, Snježana Dupljanin
Energy States of Electrons in Ultrathin Crystalline Films
15. Jovan Šetrajčić, Siniša Vučenović, Dušan Ilić, Stevo Jaćimovski
Applications of Green's Function Methods for Research of Crystal Structures

16. Dušan Ješić, Borislav Savković, Pavel Kovač,
Živko Aleksić, Dražen Sarjanović
*The Application of the Technological Process of Applying
Composite Coatings on Grinding Tools*
17. Dušan Ješić, Borislav Savković, Pavel Kovač,
Branko Štrbac, Dražen Sarjanović
*The Investigation of Structural Characteristics of Ferritic
Ductile Iron*
18. Pavel P. Kovač, Branko Dudić, Borislav Savković,
Dušan D. Ješić
They Gave Electric Cars a Scam
19. Pavel P. Kovač, Mirfad Tarić, Borislav Savković, Dušan D. Ješić
*Modeling of Cutting Forces of Hard Machining Material
with Neural Networks*
20. Radoslav Grujić
Artificial Meat – Experiment or Need
21. Marija Mitrović, Milorad Tomić, Danijela Matović,
Dragan Tošković, Miomir Pavlović
*Application of Alkyd Resin Based Coatings for Enchancing
the Steel Corrosion Resitance*
22. Srđan Vuković, Danijela Rajić, Aleksandar Vuković,
Svetlana Pelemiš
Radioactivity in Red Mud
23. Danijela Rajić, Srđan Vuković, Aleksandar Vuković,
Vesna Gojković Cvjetković, Svetlana Pelemiš
Nanocapsules Based on Plant Proteins
24. Bogdan Milićević, Miloš Ivanović, Boban Stojanović,
Nenad Filipović
Neural Networks for Solving Huxley's Equation

25. Danijela Vuković, Duško Dudić, Blanka Škipina
An Overview on the Research in the Area of Electron Trapping in Polymer Materials
26. Dragana Blagojević, Dragica Lazić, Dragana Kešelj, Zoran Petrović, Nebojša Vasiljević
Determination of Iron Content in Natural Mineral Water: Comparison of ICP-OES and Spectrophotometric Method
27. Marko Đurić, Milan Perišić, Dijana Đurić
Correlation of Test Results with Static and Dynamic Circular Plate Experiments
28. Branka Ružičić, Dragana Grujić, Blanka Škipina, Ana Velimir, Mladen Stančić
Improved Dielectric Properties of Printed Linen Fabrics Filled with Copper(I) Oxide Particles and Pinus Sylvestris L. Extract
29. Jelena Vuković, Milomirka Obrenović, Slavko Smiljanić
Effect of the Contact Time on the Efficiency of Phosphate Removal from Aqueous Solutions Using Fly Ash
30. Dragoljub Mirjanić, Tomislav Pavlović, Ivana Radonjić, Darko Divnić
Comparison of PV Solar Power Plants Potential in the Republic of Srpska According to Solar Atlas Data
31. Gordana Broćeta, Aleksandar Savić, Elefterija Zlatanović, Anđelko Cumbo, Marina Latinović, Žarko Lazić
Modelling the Erosion Resistance of Self-Comacting Concrete
32. Darko Divnić, Dragoljub Mirjanić, Esad Jakupović, Zoran Ž. Avramović, Tomislav Pavlović, Ivana Radonjić
Characterization of Solar Modules on Standard Conditions
33. Dijana Đeordić, Aleksandra Cvetinović, Matej Lipoglavšek, Sabina Markelj, Mitja Keleman
Characterization of Hydrogen Storage Materials

34. Zoran Ćurguz, Dragoljub Mirjanić, Ljubiša Preradović,
Zora S. Žunić, Zdenka Stojanovska, Predrag Kolarž
The Map of Radon Risk for the City of Banja Luka
35. Veljko Ilić, Dragan Ilić, Đorđe Antonijević, Vesna Danilović,
Sanja Milutinović-Smiljanić
Radiopacity Assessment of Portland Cement with the Addition of Strontium Compounds
36. Ljiljana Tankosić, Svjetlana Sredić
Influence of Mechanical Activation on Improvement of Dispersion Behavior of Goethite, Quartz and Clay Minerals in the Presence of Different Dispersants
37. Miloš Adamović, Milan Pantić
Transition Temperature Dependence on Anisotropy in the J_1 - J_2 - J_c - J_p Heisenberg Model with Application to 122-type of Iron Pnictides
38. Jovana V. Zorić, Vojkan M. Zorić
Contribution of Medical Research to Trasology Forensic Practice - Case Study Example
39. Andrijana Vukojević, Maria M. Savanović, Nataša Tomić,
Stevan Armaković, Svetlana Pelemiš, Sanja J. Armaković
Removal of Nadolol Using Coupled Nanomaterials Based on Titanium and Carbon
40. Maria M. Savanović, Andrijana Vukojević, Dragana Marković,
Stevan Armaković, Svetlana Pelemiš, Sanja J. Armaković
Photocatalytic Activity of ZnO and TiO₂ Towards Effective Degradation of Cefoperazone
41. Nikola Cekić
Recyclable Materials in Contemporary Building Facades

42. Milanka Điporović-Momčilović, Mladen Popović,
Milica Rančić, Jasmina Popović
*Characteristics and Application of Nanocellulose
in Modern Materials*
43. Zoran Govedar
*The Importance of Silviculture for the Production
of Wood as a Modern Material*
44. Vladan Rikić, Vladan Mičić, Ivan Ristić,
Duško Kostić, Mirko Radić
*Improving the Energy Efficiency of Insulation Materials by Adding
Polymer Waste Recycling Products*
45. Igor Grujić, Branko Latinović
Application of Information Technologies in Food Processing
46. Đorđe Mirjanić, Mileša Srećković, Vladan Mirjanić, Aleksandar
Bugarinović, Svetlana Pelemiš, Dragan Družijanić
*Laser, Modulation of Materials of Interest for Dentistry and
other Modern or Potential Problems*
47. Bojan Pavičar, Jasna Davidović, Biljana Petrović, Goran Vuleta,
Saša Trivić, Vlatko Šajinović, Nataša Egeljić-Mihailović, Nataša
Todorović, Branko Predojević
*Nuclear Medicine Staff Exposure to Ionising Radiation in
18F-FDG PET/CT Practice: A Preliminary Retrospective Study*
48. Nikola Kotorčević, Nina Busarac, Saša Nježić, Dragan Džunić,
Nenad Grujović, Fatima Živić
*Tribological Investigation of the Automotive Grade Aluminium
Alloy with Epoxy Primer Coating*
49. Vladimir Biočanin, Nemanja Vuković, Marija Ćirić, Veljko Ilić,
Đorđe Antonijević, Vukoman Jokanović
*Microporosity of Different Calcium Silicate and Calcium
Aluminate Dental Cements*

50. Vladimir Biočanin, Nemanja Vuković, Đorđe Pejanović, Mihajlo Ostojić, Veljko Kolak, Đorđe Antonijević
Calcium Aluminate Cement with Strontium Fluoride as Effective Material for Tridimensional Root-End Obturation
51. Đorđe Pejanović, Igor Pušić, Mihailo Ostojić, Andrea Kuč, Vladimir Biočanin, Marko Pejović, Nikola Marković, Maja Pavlović
Extraction Socket Preservation Using an Autologous Dentin Graft
52. Josipa Karilj, Vladan Mirjanić
The Influence of Hereditary Factors on the Development of Orthodontic Anomalies and Mobile Orthodontic Appliances
53. Radmila Arbutina, Nataša Trtić, Ognjenka Janković, Valentina Veselinović, Irena Radman Kuzmanović
Laboratory Testing of Buffering Capacity of Unstimulated and Stimulated Saliva in Experimental and Control Groups after Titration with HCL and NaOH
54. Dražan Jaroš, Goran Kolarević, Milovan Savanović, Dragoljub Mirjanić
A Failure Mode and Effect Analysis of Volumetric Modulated Arc Therapy of Prostate Cancer
55. Goran Kolarević, Dražan Jaroš, Bojan Pavičar, Tatjana Ignjić, Dragoljub Mirjanić
The Impact of Covid-19 on External Radiotherapy in the Republic of Srpska
56. Branislava Jeftić, Igor Hut, Ivana Stanković (Mileusnić), Jovana Šakota-Rosić, Lidija Matija, Đuro Koruga
Deep Learning Algorithm for Cervical Cancer Detection Based on Images of Optomagnetic Spectra

57. Jovana Šakota-Rosić, Branislava Jeftić, Ivana Stanković (Mileusnić), Lidija Matija, Đuro Koruga
RGB Color Histogram Analysis of Images Obtained Through Nanophotonic Filters
58. Tamara Tadić, Bojana Marković, Aleksandra Nastasović, Jelena Lukić, Ljiljana Suručić, Zvezdana Sandić, Antonije Onjia
Synthesis of Molecularly Imprinted Polymer as a Selective Sorbent of Aniline
59. Valentina Veselinović, Nataša Trtić, Tijana Adamović, Olivera Dolić, Radmila Arbutina, Aleksandra Đeri, Saša Marin, Nataša Knežević
The Influence of Different Beverages on the Color and Translucence Parameters Stability of Highly Translucent Zirconium Ceramics, Composite Nanoceramics and Hybrid Cad/Cam Ceramics
60. Zorana Stamenković, Nenad Nedeljković, Vladan Mirjanić, Vanja Stojić, Jovan Marković, Zoran Jezdić
Combined Orthodontic and Surgical Treatment in Patient with Class III and Facial Asymmetry – Case Report
61. Zorana Stamenković, Nenad Nedeljković, Vladan Mirjanić, Vanja Stojić, Nemanja Marinković, Ivan Arsić
Early Treatment of Skeletal Class II by Fränkel Functional Regulator – Case Report
62. Tatjana Ignjić, Goran Kolarević, Bojan Pavičar
Dosimetry Verification of Bolus Density in Radiotherapy
63. Sanja Stojanović, Jelena Najdanović, Žarko Mitić, Perica Vasiljević, Nenad Ignjatović, Stevo Najman
Interaction of Cells with Different Biomaterials in Vitro and Methods of Characterization

64. Jelena Živković, Milena Radenković, Sanja Stojanović,
Jelena Najdanović, Vladimir Cvetković, Marija Vukelić-Nikolić,
Ivica Vučković, Nenad Ignjatović, Stevo Najman
*Tissue Response to Different Implanted Biomaterials
in Models in Vivo*
65. Jovan Dašić, Violeta Đorđević, Predrag Dašić
*Application of 3D Printing for the Processing of Polymer
Materials*
66. Predrag Dašić, Snežana Topalović, Olivera Živković
*The Role of Digital Technologies in the Development
and Application of the Circular Economy*
67. Milutin M. Živković, Predrag V. Dašić, Marina Jovanović,
Milan M. Milosavljević
*Analysis of the Influence of Thermochemical Processes on the
Improvement of the Tribological Properties of Materials During
the Production of the Distribution Piston of the Hand Pump*
68. Radmila Lišanin, Čedo Lalović
*Quantitative Analysis of Commercial „Voda Voda”
and Evaluation of its Biological Value*
69. Jelena Čeperković, Snežana Topalović
*Statistical Analysis of the Quality of Food Materials Based on
the HACCP Standard*
70. Marina Karić
Application of Composite Materials in the Automotive Industry