

Ninth International Conference

“Modern Trends in Science”

FMNS-2021



15 - 19.09.2021, Blagoevgrad, BULGARIA

P R O G R A M

Patronized by
Prof. Borislav Yurukov
Rector of the South-West University

<http://www.fmns.swu.bg>

Program Overview

Registration (15.09.2021)

13:00 – 18:30

Opening Ceremony (16.09.2021)

10:00 – 10:30

Chairman: Prof. Mario Mitov, DSc, PhD

Plenary Lectures (16.09.2021)

10:30 – 11:15

Prof. Tony Spassov - Sofia University "St. Kliment Ohridski"
"Porous metallic structures by de-alloying amorphous and nanocrystalline materials"

11:15-12:00

Prof. Carlo Santoro – University of Manchester, UK
"Oxygen Reduction Reaction in neutral media: advancements and limitations"

Plenary Lectures (17.09.2021)

10:30 – 11:15

Dr. Manfred Schütze - Otto-von-Guericke University Magdeburg, Germany
"Models or reality - what is more useful? And how computer simulation can assist in this?"

11:15-12:00

Prof. German Perlovich - Russian Academy of Sciences
"Development of bioavailable drugs on basis of adamantane and memantine derivatives"

Cancelled

Section Sessions: 16 and 17.09.2021

13:30 - 18:20

Special session:

"Low-carbon energy for transport and household"

16.09.2021

13:30 - 18:20

Poster session: 16.09.2021

18:00 – 19:30

Social program

18.09.2021

Section: Chemistry

Thursday, September 16th	
Chairman: Assoc. Prof. Mitko Stoev	
13:30-13:45	O-C-1 Chemical composition of underground waters in Demanová valley as a tool for finding connections between the Štefanová and Demanová cave system <i>David Havlicek, Pavel Herich, Katerina Havlickova</i>
13:45-14:00	O-C-2 Synthesis and reactivity of a ferrocene distibine <i>Petr Stepnicka, Jiri Schulz, Jakub Antala</i>
14:00-14:15	O-C-3 Synthesis and Coordination Behavior of New Ferrocene α -Aminobis(phosphine) <i>Michal Navrátil, Ivana Císařová, Petr Štěpnička</i>
14:15-14:30	O-C-4 Coordination behavior of a new phosphinoguanidine ligand <i>Zdenek Leitner, Ivana Cisarova, Petr Stepnicka</i>
14:30-14:45	O-C-5 Synthesis and reactivity of a stable primary phosphine oxide, and preparation of its heavier congeners <i>Filip Horký, Ivana Císařová, Petr Štěpnička</i>
14:45-15:00	O-C-6 Isocyanoferrocene and its carbenes' complexes <i>Petr Vosáhlo, Michal Franc, Petr Harmach, Ivana Císařová, Petr Štěpnička</i>
15:00-15:30	O-C-7 Obtaining granular activated carbon using a binder gelatin in the joint processing of rice and oil waste <i>Nurbol Appazov, Banu Diyarova, Baurat Bazarbayev, Bulat Dzhiembaev, Olena Lygina</i>
15:30-15:45	O-C-8 Interactions and Reactivity of Various Thia- and Carbaboranes with Bases <i>Jan Vrana, Ales Ruzicka</i>
Coffee break	
Chairman: Assoc. Prof. Atanas Chapkanov	
16:15-16:30	O-C-9 Cu-catalyzed reductions of brominated phenols in alkaline aqueous solution <i>Tomas Weidlich, Barbora Kamenická</i>
16:30-16:45	O-C-10 Preparation, characterization and study of radiation stability of bulk Ti ₂ AlC MAX phase <i>Bauyrzhan Ismagulov, Jiri Plocek, Jiri Vacik, Jaroslav Kupcik, Jiri Nemecek</i>
16:45-17:00	O-C-11 Extending of the NLO Materials Family – Novel Guanidine-based Molecular Crystals <i>Ivan Nemec, Irena Matulkova, Ivana Cisarova, Petr Nemec</i>
17:00-17:15	O-C-12 Study of proton transfer trajectory in proton conductors using in situ X-ray powder diffraction measurements <i>Jiří Plocek, David Havlíček</i>
17:15-17:30	O-C-13 Drinking water purification: Filtration, Reverse Osmosis and UV disinfection systems <i>Nadya Ivanova, Elitsa Chorbadzhiyska, Mitko Stoev</i>
17:30-17:45	O-C-14 Application of the additive manufacturing technologies in the field of chemical engineering – an analysis <i>Apostol Apostolov, Dragomir Yankov, Elena Razkazova-Velkova</i>
17:45-18:00	O-C-15 Influence of skin metabolites of the newly synthesized derivative of bexarotene and paracetamol on the potential antitumor effect <i>Ivelin Iliev, Yana Koleva, Svetlana Georgieva</i>
18:00-18:15	O-C-16 Study of the reactivity of the generated liver metabolites of a newly synthesized derivative of bexarotene and paracetamol <i>Ivelin Iliev, Yana Koleva, Svetlana Georgieva</i>
18:15-18:30	O-C-17 Investigations about thermodynamic and kinetic characteristics of adsorption process <i>Yordanka Tashesva</i>

Friday, September 17th	
Chairman: Assoc. Prof. Zhiuko Velkov	
13:30-13:45	O-C-18 Preparation of arginine complexes with heavy metal ions <i>Viktoriya Trifonova, Krasimir Vasilev, Yana Koleva</i>
13:45-14:00	O-C-19 Synthesis, characterization and microbiological evaluation of new metronidazole derivatives <i>Sylvia Stamova, Svetlana Georgieva, Javor Mitkov, Maya Georgieva, Emilia Georgieva, Neli Ermenlieva</i>
14:00-14:15	O-C-20 Establishing Effective Ventilation in Residential Bathrooms by CFD methods <i>Konstantina Stefanova</i>
14:15-14:30	O-C-21 Advanced approaches for waste gases purification from SO ₂ . Modelling and simulation <i>Konstantina Stefanova, Nadezhda Dermendzhieva, Elena Razkazova-Velkova, Daniela Dzhonova-Atanasova</i>
14:30-14:45	O-C-22 Software based approach for prediction of microbial activity of new metronidazole derivatives <i>Sylvia Stamova, Yana Koleva, Svetlana Georgieva</i>
14:45-15:00	O-C-23 The probable reactivity of a petroleum component <i>Yana Koleva</i>
Coffee break	
Chairman: Assoc. Prof. Petko Mandjukov	
16:15-16:30	O-C-24 Memantine analogues with potential neuroprotective effects <i>Aleksandra Tencheva, Radoslav Chayrov, Ivanka Stankova</i>
16:30-16:45	O-C-25 Radical-scavenging activity evaluation of a series of biogenic amines <i>Joanna Nacheva, Zhiuko Velkov</i>
16:45-17:00	O-C-26 Radical-scavenging activity of phenolic compounds with different Structure Cancelled <i>Simona Dimitrova, Zhiuko Velkov</i>
17:00-17:15	O-C-27 Analysis of the structural requirements of angiotensin-converting enzyme-2 (ACE-2) <i>Tatyana Dzimbova, Atanas Chapkanov</i>
17:15-17:30	O-C-28 Factors influencing on the tautomeric forms and spectral characteristics of 1-phenyl substituted pyrazol-5-ones <i>Atanas Chapkanov, Tatyana Dzimbova</i>
17:30-17:45	O-C-29 Specificity of the binding in the active site of mu-opioid receptor (MOR) of the selective ligands <i>Tatyana Dzimbova, Fatima Sapundzhi, Nevena Pencheva, Peter Milanov</i>
17:45-18:00	O-C-30 Biodestruction of polycapromide textile materials <i>Elena Pekhtasheva, Elena Raykova, Tatiana Chalykh, Marina Polozhishnikova</i>

Section: Physics

Thursday, September 16th	
Chairman: Assoc. Prof. Svetoslav Kolev	
13:30-13:45	O-P-1 Photodynamic Treatment of Gastrointestinal Tumour Model Using Different Photosensitizers <i>Lidia Zaharieva, Biliانا Nikolova, Ivan Iliev, Vanya Mantareva, Ivan Angelov, Gennady Meerovich, Alexander Khorovodov, Oxana Semyachkina – Glushkovskaya, Ekaterina Borisova</i>
13:45-14:00	O-P-2 Near-Infrared Spectroscopy of Ex Vivo Cutaneous Melanin-Pigmented Neoplasia <i>Victoria Mircheva, Petranka Troyanova, Ivan Terziev, Yulia Khristoforova, Ivan Bratchenko, Lyudmila Bratchenko, Ekaterina Borisova</i>
14:00-14:15	O-P-3 Polarimetric Studies of Cutaneous Degenerative Conditions Ex Vivo in Visible Spectral Range <i>Stoyan Ilyov, Tsanislava Genova, Deyan Ivanov, Boyko Kolev, Tatiana Novikova, Petranka Troyanova, Ivan Terziev, KM Sindhoora, Nirmal Mazumder, Ekaterina Borisova</i>
14:15-14:30	O-P-4 Endogenous and Exogenous Fluorescent Diagnostics of Gastrointestinal Tumours - Advances and Challenges <i>Ekaterina Borisova, Tsanislava Genova, Boyko Kolev, Alexander Khorovodov, Ilana Agranovich, Oxana Semyachkina-Glushkovskaya, Vanya Mantareva, Ivan Angelov, Hristo Valkov, Borislav Vladimirov</i>
14:30-14:45	O-P-5 Impact of physical and chemical modification on the immobilization of β -galactosidase in poly-lactic acid multilayer structures <i>Aleksandar Grigorov, Asya Viraneva, Temenujka Yovcheva, Ilia Iliev, Ivanka Vlaeva</i>
14:45-15:00	O-P-6 Milk protein-based formulations as controlled delivery systems for Tolfenamic acid <i>Sofia Milenkova, Bissera Pilicheva, Nikolay Zahariev, Temenuzhka Yovcheva, Maria Marudova</i>
Coffee break	
Chairman: Assoc. Prof. Ralitsa Stanoeva	
15:30-15:45	O-P-7 Influence of humidity on surface potential decay of gamma irradiated polypropylene and poly(ethylene terephthalate) electrets <i>Asya Viraneva, Ivanka Vlaeva, Temenuzhka Yovcheva</i>
15:45-16:00	O-P-8 Optical quartz fibers as non-linear media <i>Lyuben Mihov, Todor Cholakov</i>
16:00-16:15	O-P-9 Non-invasive study of changes in venous oxygen saturation Cancelled <i>Sergey Mamilov, Sergey Yesman, Dmitry Velyhotsky, Alexander Gisbrecht</i>
16:15-16:30	O-P-10 Investigation of hydrodynamic phenomena during an electric discharge in a liquid <i>Mitko Stoev, Nurgul Shuyushbayeva, Nazgul Tanasheva, Gulsinay Altayeva, Aliya Kaliyeva</i>
16:30-16:45	O-P-11 Opportunities of ecologization physics course <i>Nurgul Shuyushbayeva, Aliya Kaliyeva, Nazgul Tanasheva, Gulsinay Altayeva, Moldir Talpakova</i>
16:45-17:00	O-P-12 On matrixes of coefficients of thermoelastic and electromagnetic waves propagating in anisotropic media <i>Nurlybek Ispulov, Almar Zhumabekov, Kairat Dossumbekov, Anara Bektazinova</i>

Section: Geography, Ecology and Environmental Protection

Thursday, September 16th	
Chairman: Assoc. Prof. Lidia Sakelarieva	
13:30-13:45	O-GEEP-1 Morphometric analysis of the relief of Slavyanka mountain <i>Galina Bezinska, Krasimir Stoyanov, Siyka Keseva</i>
13:45-14:00	O-GEEP-2 Wind Variations over Balkans since 1836 <i>Georgi Belev, Yavor Chapanov</i>
14:00-14:15	O-GEEP-3 Seasons and Spatial Variations of Sea-Land Breeze over the Bulgarian Coastal Area <i>Georgi Belev, Yavor Chapanov</i>
14:15-14:30	O-GEEP-4 Attitudes towards introduction of remote work beyond the Covid-19 pandemic among teachers in Southwestern Bulgaria <i>Vladimir Karadzhov, Milena Draganova</i>
14:30-14:45	O-GEEP-5 Trends and challenges for the health system in Kyustendil region <i>Gergana Nikolova, Emilia Patarchanova</i>
14:45-15:00	O-GEEP-6 The "Healthy city" – measurement of the achieved level of completion and development <i>Maria Shishmanova, Veselina Dalgacheva</i>
15:00-15:15	O-GEEP-7 The Green city - oportunities to measure its potential <i>Veselina Dalgacheva, Maria Shishmanova</i>
Coffee break	
Chairman: Assoc. Prof. Emilia Varadinova	
15:45-16:00	O-GEEP-8 Assessment of the ecological purity and safety of non-traditional Bulgarian fruit wines <i>Stefka Minkova, Ivanka Vlaeva, Krastena Nikolova, Nadejda Petrova, Galia Gentscheva</i>
16:00-16:15	O-GEEP-9 Morphological and cytogenetic characteristic of Belgica antarctica Jacobs (Diptera, Chironomidae) <i>Julia Ilkova, Paraskeva Michailova, Iryna Kozeretska, Pavlo Kovalenko, Artem Dzhulaj, Volodymyr Gorobchyshyn</i>
16:15-16:30	O-GEEP-10 The effect of cadmium on salivary gland polytene chromosomes of Chironomus riparius Mg (Chironomidae, Diptera) <i>Julia Ilkova, Daniela Dimitrova</i>
16:30-16:45	O-GEEP-11 In vivo assessment of incised wound healing in rats after application of a bigel formulation contained St. John's Wort extract <i>Stefan Stefanov, Stanila Stoeva, Svetlana Georgieva, Minka Hristova, Krastena Nikolova, Mirena Dobрева, Velichka Andonova</i>
16:45-17:00	O-GEEP-12 Purification of soil from oil pollution using hydrocarbon-oxidizing microorganisms <i>Roza Narmanova, Nurbol Appazov, Andrey Filonov, Irina Puntus, Anipa Tapalova, Kenzhegul Kuanyshbaeva</i>
17:00-17:15	O-GEEP-13 Colonising of decaying macroalgae debris by microarthropods with special references to Collembola <i>Izabella Olejniczak, Paweł Boniecki, Anita Kaliszewicz, Kamil Karaban, Ninel Panteleeva</i>
17:15-17:30	O-GEEP-14 Responses of soil mesofauna to non-trophic activities of epigeic and endogeic earthworms <i>Kamil Karaban, Alexei Uvarov</i>
17:30-17:45	O-GEEP-15 Resource partitioning between competing individuals: an experiment with bean weevil Acanthoscelides obtectus <i>Janusz Uchmański, Katarzyna Chajczuk, Krzysztof Opalinski</i>
17:45-18:00	O-GEEP-16 A long-term study of some population characteristics of the Hermann's Tortoise Testudo hermanni and the Spur-thighed Tortoise T. graeca in the northwestern foothills of Pirin Mountains, Bulgaria <i>Emanuil Mitrevichin, Hristo Peshev, Emiliyan Stoynov, Atanas Grozdanov, Lidia Sakelarieva, Alexander Pulev</i>
18:00-18:15	O-GEEP-17 Distribution and Activity of Bulgarian Viper, Vipera ammodytes montandoni Boulenger, 1904 (Reptilia: Viperidae) in South-Western Bulgaria <i>Alexander Pulev, Borislav Naumov, Lidia Sakelarieva</i>

Friday, September 17th	
Chairman: Assist. Prof. Galina Bezinska	
13:30-13:45	O-GEEP-18 Study of surface water from reservoirs located in the Norilsk Industrial district <i>Tatyana Bezelyanskaya</i>
13:45-14:00	O-GEEP-19 Characteristics of microplastic pollution in inland waters under different anthropogenic pressure <i>Anita Kaliszewicz, Kamil Karaban, Tomasz Runka, Michał Winczek, Agnieszka Poniatowska</i>
14:00-14:15	O-GEEP-20 Aquatic bryophytes in upland rivers in Bulgaria <i>Gana Gecheva, Silviya Stankova, Nikolina Gribacheva</i>
14:15-14:30	O-GEEP-21 Ephemeroptera, Plecoptera and Trichoptera (Insecta) of mountain tributaries of the Struma River: Diversity in relation to environmental parameters and zoogeographic features <i>Violeta Tyufekchieva, Yanka Vidinova, Vesela Evtimova, Emilia Varadinova, Milcho Todorov</i>
14:30-14:45	O-GEEP-22 Macrozoobenthos in mountain standing water bodies in Bulgaria <i>Emilia Varadinova, Galia Georgieva, Mila Ihtimanska, Yanka Vidinova, Vesela Evtimova, Violeta Tyufekchieva, Milcho Todorov</i>
14:45-15:00	O-GEEP-23 Taxonomic composition and dominant structure of the macrozoobenthos in Maritsa River and some of its main tributaries, South Bulgaria <i>Jiyoung Park, Lidia Sakelarieva, Emilia Varadinova, Vesela Evtimova, Yanka Vidinova, Violeta Tyufekchieva, Galia Georgieva, Mila Ihtimanska, Milcho Todorov</i>
15:00-15:15	O-GEEP-24 Characteristics of macroinvertebrate assemblages in karst and other spring ecosystems (R15 national river type) in Bulgaria <i>Yanka Vidinova, Vesela Evtimova, Violeta Tyufekchieva, Emilia Varadinova, Milcho Todorov, Mila Ihtimanska, Galia Georgieva</i>
Coffee break	
Chairman: Assist. Prof. Miroslav Ivanov	
15:45-16:00	O-GEEP-25 Age determination of Harbour porpoises (<i>Phocoena phocoena relicta</i>) from the Bulgarian Black sea coast <i>Violeta Evtimova, Dimitar Parvanov, Hristo Peshev, Petar Petrov, Atanas Grozdanov</i>
16:00-16:15	O-GEEP-26 Ecological assessment of standing water bodies in Bulgaria through Hungarian Macrozoobenthos Multimetric Index for lakes <i>Marin Smilyanov, Emilia Varadinova</i>
16:15-16:30	O-GEEP-27 Development of Bulgarian fish-based index for ecological assessment of the Lower Danube section (BRID) <i>Apostolos Apostolou, Luchezar Pehlivanov</i>
16:30-16:45	O-GEEP-28 Determination of zones for reproduction of the fish fauna and zones for indwelling of economically valuable fish species within the West Aegean Sea basin region <i>Stefan Kazakov, Dimitar Parvanov, Borislav Borisov, Violeta Zinovieva, Luchezar Pehlivanov</i>
16:45-17:00	O-GEEP-29 Methodological approach to identify zones for reproduction of the fish fauna – application in rivers of the Black Sea and East Aegean Sea basin regions <i>Luchezar Pehlivanov, Stefan Kazakov, Apostolos Apostolou, Tihomir Stefanov</i>
17:00-17:15	O-GEEP-30 The herpetofauna of South park Sofia – species, distribution and conservation threats <i>Atanas Grozdanov, Anton Sokolov, Petar Petrov, Vasil Atanasov, Dimitar Dimitrov, Plamen Petrov, Hristo Peshev</i>
17:15-17:30	O-GEEP-31 Specifics of birds of prey status in the areas of vulture reintroduction activities in Bulgaria <i>Emiliyan Stoykov, Hristo Peshev, Elena Kmetova–Biro, Ivelin Ivanov, Georgi Stoyanov, Simeon Marin, Atanas Grozdanov</i>
17:30-17:45	O-GEEP-32 GPS tracking of Griffon vultures tagged on the Balkans - evaluation of the method, based on five years results <i>Hristo Peshev, Emiliyan Stoykov, Atanas Grozdanov</i>
17:45-18:00	O-GEEP-33 Vertebrate diversity at the vulture feeding station in Kresna gorge <i>Hristo Peshev, Emiliyan Stoykov, Emanuil Mitrevichin, Atanas Grozdanov</i>

Section: Mathematics

Thursday, September 16th	
Chairman: Assoc. Prof. Nikolay Kitanov	
13:30-13:45	O-M-1 2-norms generated by solutions of second-order linear differential equations <i>Slagjana Brsakoska, Alekso Malcheski</i>
13:45-14:00	O-M-2 Recurrent solutions of the Lorenz system of differential equations <i>Biljana Zlatanovska, Donco Dimovski</i>
14:00-14:15	O-M-3 A particular solution of the third-order shortened Lorenz system via integrability of a class of differential equations <i>Biljana Zlatanovska, Boro Piperevski</i>
14:15-14:30	O-M-4 On a class off numerical semigroups with embedding dimension equal to 4 <i>Violeta Angjelkoska, Donco Dimovski, Irena Stojmenovska</i>
14:30-14:45	O-M-5 Parabolic equations with causal operators <i>Tzanko Donchev, Nikolay Kitanov, Dimitar Kolev</i>
14:45-15:00	O-M-6 Generalized solutions of nonlocal semi-linear systems with time lag <i>Tzanko Donchev, Nikolay Kitanov, Stanislav Stefanov</i>
15:00-15:15	O-M-7 Maximal regularity for evolution equations and application to the Stefan problem <i>Martin Lukarevski</i>
Coffee break	
Chairman: Assoc. Prof. Vassil Grozdanov	
15:30-15:45	O-M-8 Analysis and prediction of the spread of Covid-19 in North Macedonia <i>Limonka Koceva Lazarova, Aleksandra Stojanova, Natasha Stojkovikj, Marija Miteva, Marija Ljubenovska</i>
15:45-16:00	O-M-9 Vaccination queueing system simulation <i>Natasha Stojkovikj, Aleksandra Stojanova, Limonka Koceva Lazarova, Marija Miteva, Pamela Redzepovska</i>
16:00-16:15	O-M-10 Comparison methods of estimating missing data in real data time series <i>Eljona Milo, Lorena Margo</i>
16:15-16:30	O-M-11 Bootstrapping the coefficients of multiple logistic regression model in medicine data <i>Lorena Margo, Eljona Milo, Juliana Karanxha</i>
16:30-16:45	O-M-12 On Simulation and Modeling in Economics <i>Mikhail Kolev, Sevasti Georgiadou</i>
Friday, September 17th	
Chairman: Assoc. Prof. Mikhail Kolev	
13:30-13:45	O-M-13 N-tuple orbits tending to infinity for Hilbert space operators <i>Sonja Mančevska, Marija Orovčanec</i>
13:45-14:00	O-M-14 $H_p(N_0, b)$ space embedding into $l_q(N_0)$ space in the case $p \leq q$ <i>Vitaliy Zhurov, Lezzetzhane Mustafina, Nella Abayeva, Alina Yarullina</i>
14:00-14:15	Functions constructed over finite groups and uniform distribution of sequences <i>Vassil Grozdanov</i>
14:15-14:30	O-M-15 The rank of the monoid of partial automorphisms on a crown <i>Ilinka Dimitrova, Joerg Koppitz</i>
14:30-14:45	O-M-16 On some stochastic applications to real world problems <i>Iveta Nikolova, Krasimir Yordzhev, Ivelina Peneva</i>
14:45-15:00	O-M-17 Transfer Learning for Medical Image Classification, <i>Irina Naskinova</i>
Coffee break	

Section: Informatics

Thursday, September 16th	
Chairman: Assoc. Prof. Radoslav Mavrevski	
13:30-13:45	O-I-1 The Impact of the Knowledge Management Strategy on Distance E-learning <i>Irena Atanasova</i>
13:45-14:00	O-I-2 The Role of Organizational Culture and Knowledge Management for Knowledge Dissemination in Distance e-learning <i>Irena Atanasova, Elena Karashtranova, Nadezda Borisova</i>
14:00-14:15	O-I-3 Scaling of clustering algorithms for big data sets with Weka <i>Aleksandar Stoimenovski</i>
14:15-14:30	O-I-4 Application of Machine Learning in Software Development: A Systematic Mapping Study, <i>Metodi Erdelski, Ivo Damyanov</i>
14:30-14:45	O-I-5 Research Work of Perceptron Algorithms for Recognition on Biometrics Data, <i>Margarita Todorova</i>
14:45-15:00	O-I-6 Relational Database Design for University Course Timetabling Problem, <i>Velin Kralev, Radoslava Krалева</i>

Section: Technical Sciences

Friday, September 17th	
Chairman: Assoc. Prof. Ivan Nedyalkov	
13:30-13:45	O-TS-1 Organizational-technological aspects in the construction of construction sites <i>Mira Zafirova, Dimitar Kaloshev</i>
13:45-14:00	O-TS-2 Structure and properties of coatings based on hydroxyapatite obtained by the detonation method <i>Bauyrzhan Rakhadilov, Daryn Baizhan, Laila Zhurerova, Didar Yeskermessov, Aisulu Kalitova</i>
14:00-14:15	O-TS-3 Electrolyte plasma hardening of 20X2H4A low-carbon steel <i>Bauyrzhan Rakhadilov, Zarina Satbaeva, Rauan Kozhanova, Lyaila Bayatanova, Aisulu Kalitova</i>
14:15-14:30	O-TS-4 Production of coal powder by the electric pulse method <i>Ulan Nussupbekov, Mitko Stoev, Ayanbergen Khassenov, Dana Karabekova</i>
14:30-14:45	O-TS-5 Investigation of the operation of a thermoelectric converter <i>Perizat Kissabekova, Dana Karabekova, Ayanbergen Khassenov, Lyubov Chirkova, Amangeldy Satybaldin</i>
14:45-15:00	O-TS-6 Computer simulations for wireless network analysis <i>Iliyan Ivanov</i>
Coffee break	

Section: Methodology in Education

Thursday, September 16th	
Chairman: Assoc. Prof. Ivelina Kotseva	
13:30-13:45	O-ME-1 Possibilities for mathematical competences development in lower secondary school through game-based learning <i>Krista Mehandzhiyska, Daniela Tuparova</i>
13:45-14:00	O-ME-2 The Constructivist Approach in Mathematics Education <i>Hristina Shekerliyska-Vachkova</i>
14:00-14:15	O-ME-3 The problems of teaching higher mathematics with the use of distance learning technologies <i>Lezzetzhana Mustafina, Bayan Alimova, Dana Kapzhapparova, Bakhytzhan Mustafina</i>
14:15-14:30	O-ME-4 The chemical experiment as a cross point in the development of the mathematical competence and competence in science, technology, engineering and entrepreneurship competence <i>Liliya Boyadzhieva, Elitsa Chorbazhiyska</i>
14:30-14:45	O-ME-5 Chemistry in our days <i>Alexandra Kamusheva, Elisaveta Mladenova</i>
14:45-15:00	O-ME-6 Inquiry based science investigations for enhancing student learning <i>Elisaveta Malamova</i>
Coffee break	
Chairman: Assist. Prof. Liliya Boyadzhieva	
15:30-15:45	O-ME-7 The potential of YouTube as a learning tool in physics education: a survey among secondary students <i>Ivelina Kotseva, Nikolay Nikolov</i>
15:45-16:00	O-ME-8 Analysis of problem-based learning in physics from the perspective of integrated STEM education <i>Ivelina Kotseva, Maya Gaydarova, Fabien Kunis, Konstantin Ilchev</i>
16:00-16:15	O-ME-9 Applying collaborative activities in high school physics course during hybrid model of learning <i>Fabien Kunis, Ivelina Kotseva, Maya Gaydarova</i>
16:15-16:30	O-ME-10 Investigation of instructional practices in high-school atomic and subatomic physics <i>Konstantin Ilchev, Ivelina Kotseva</i>
16:30-16:45	O-ME-11 Communicating results in project-based and problem-based physics education: the perspective of engineering design in STEM <i>Ivelina Kotseva</i>
16:45-17:00	O-ME-12 Application of the project method in physics education in classes with intensive studying of English <i>Georgi Malchev</i>

Special session
"Low-carbon energy for transport and household"

Thursday, September 16th	
Chairman: Assoc. Prof. Yolina Hubenova, DSc	
13:30-14:00	O-SS-1 Advanced alkaline water electrolysis with Co and Ni based non-carbon supported electrocatalysts <i>Evelina Slavcheva, Katerina Maksimova-Dimitrova, Galin Borisov, Hristo Penchev, Filip Ublekov</i>
14:00-14:15	O-SS-2 Electrochemical hydrogen compressor – novel cell design, electrodes structure and catalysts <i>Galin Borisov, Nevelin Borisov, Evelina Slavcheva, Elefteria Lefterova</i>
14:15-14:30	O-SS-3 Bio-hydrogen production <i>Tsvetomila Parvanova-Mancheva, Eugenia Vasileva, Venko Beschkov</i>
14:30-14:45	O-SS-4 Biological hydrogen production by Clostridium sp. <i>Eugenia Vasileva, Tsvetomila Parvanova-Mancheva, Venko Beschkov</i>
14:45-15:00	O-SS-5 Synthesis and characterization of photoactive titanium oxides by anodic oxidation <i>Iva Betova, Martin Bojinov, Vasil Karastoyanov</i>
15:00-15:15	O-SS-6 Hybrid supercapacitors with innovative binder - ex-situ structural and morphological studies <i>Boriana Karamanova, Philip Ublekov, Christo Novakov, Ivailo Dimitrov, Antonia Stoyanova, Liubomir Soserov</i>
Coffee break	
Chairman: Assoc. Prof. Galin Borisov	
16:00-16:15	O-SS-7 Capture of CO ₂ by mesoporous CeO ₂ /ZrO ₂ materials <i>Oyundari Tumurbaata, Margarita Popova, Hristina Lazarova, I. Spasova, S. Andonova, O. Lagunov, Dimitar Panayotov</i>
16:15-16:30	O-SS-8 Organic acids and hydrogen production by a newly selected microbial consortium <i>Greta Naydenova, Dragomir Yankov</i>
16:30-16:45	O-SS-9 Mg-Ca _{0.3} Electrochemical Activity Exposed to Hank's Physiological Solution and Properties of Ag-Nano-Particles Deposits <i>José Luis González-Murguía, Lucien Veleva</i>
16:45-17:00	O-SS-10 Metal Recovery from silver(I) dithiosulfate complex by Microbial Electrochemical Snorkel <i>Milena Kehayova, Elitsa Chorbadzhiyska, Yolina Hubenova, Mario Mitov</i>
17:00-17:15	O-SS-11 Electrocatalytic activity of Ni- and Co-modified graphitized paper towards hydrogen evolution reaction in neutral electrolyte <i>Desislava Apostolova, Elitsa Chorbadzhiyska, Galin Borisov, Mario Mitov, Yolina Hubenova</i>

POSTER SESSION

Chemistry	
P-C-1	Influence of electrolyte additives on the performance of the positive plates of lead batteries <i>Maria Matrakova, Albena Aleksandrova, Plamen Nikolov</i>
P-C-2	Effect of Organic Electrolyte Additives on the Performance of Electrodes of Lead Battery <i>Albena Aleksandrova, Maria Matrakova, Plamen Nikolov</i>
P-C-3	Absorption – Adsorption Method for Gas Purification from SO ₂ in Power Plants <i>Boyan Boyadjiev, Petya Popova-Krumova,, Christo Boyadjiev, Elena Razkazova-Velkova</i>
P-C-4	CFD Modeling of Two-phase Flow in an Absorption-adsorption Column <i>Stela Panyovska, Daniela Dzhonova – Atanasova, Elena Razkazova Velkova</i>
P-C-5	Synthesis and characterization of electrode materials for supercapacitor systems <i>Borislava Mladenova, Borianna Karamanova, Svetlana Veleva, Toma Stankulov, Vania Ilcheva, Antonia Stoyanova, Mariela Dimitrova</i>
P-C-6	Butyric acid pertraction with and without car-rier in the organic membrane. Parameter identification <i>Petya Popova-Krumova, Dragomir Yankov, Madlen Lazarova, Raika Vladova, Artak Kostanyan, Andrey Voshkin</i>
P-C-7	Assessment methods for improving the Energy efficiency of Wastewater treatment plants <i>Rayka Vladova, Natasha Vaklieva-Bancheva</i>
P-C-8	Adsorption of Pd(II) on N- and S- modified silica sorbents <i>Petranka Petrova, Maya Chochkova, Metody Karadjov</i>
P-C-9	Possibilities of increasing the detection power of ICP-OES <i>Petranka Petrova, Serafim Velichkov, Nonka Daskalova</i>
P-C-10	ICP-OES - analytical characteristics and application in chemical analysis <i>Petranka Petrova, Serafim Velichkov, Nonka Daskalova</i>
P-C-11	Synthesis and biological activity of new N-dihydroxycinnamic acid hybrids <i>Maya Chochkova, Anna-Maria Hristova, Tsvetelina Ilieva, Hailun Jiang, Boyka Stoykova, Rui Liu, Yavor Mitrev, Martin Štícha, German Perlovich</i>
P-C-12	Effect of the final thermal sealing on the performance of combined Ce-O-Al films formed on AA2024-T3 aircraft alloy <i>Stephan Kozhukharov, Mihaela Georgieva, Alexander Tsanev, Christian Girginov, Maria Petrova</i>
P-C-13	Durability of Cu, Ni and Cu/Ni modified AAO layers, formed on AA2024-T3 aircraft alloy <i>Christian Girginov, Stephan Kozhukharov, Borianna Tsaneva</i>
P-C-14	Effect of the thermal sealing on Ce-O-Al coating primers in concentrated phosphate solutions <i>Stephan Kozhukharov, Angel Dishliev, Alexander Tsanev, Christian Girginov</i>
P-C-15	Factors, governing the metal affinity and selectivity towards HDAC8 enzyme active site <i>Nikolay Toshev, Diana Cheshmedzhieva, Todor Dudev</i>
P-C-16	Synthesis and characterization of new deep eutectic solvents <i>Denitsa Ivanova, Dragomir Yankov</i>
P-C-17	Effect of the ultrasound assisted mixing of Zn active mass with different content of BSCCO (2212) ceramics additives <i>Galia Ivanova, Antonia Stoyanova, Elefteria Leffterova, Violeta Petrova, Yordan Marinov, Georgi Hadjichristov, Angelina Stoyanova-Ivanova</i>

Physics	
P-P-1	Possibility of measuring the angular characteristics of the primary and secondary tracks of relativistic nuclear fragmentation by the nuclear track emulsion method <i>Ralitsa Stanoeva, Andrey Zaitsev, Pavel Zarubin</i>
P-P-2	Search for decays of the unstable nuclei in dissociation of relativistic nuclei ^{14}N <i>Elitsa Mitsova, Ralitsa Stanoeva, Andrey Zaitsev, Pavel Zarubin</i>
P-P-3	Correlation in formation of ^8Be nuclei and α -particles in fragmentation of relativistic nuclei <i>Andrey Zaitsev, Pavel Zarubin</i>
P-P-4	Influence of the Beam Power on the Microstructure and Mechanical Properties of Electron Beam Welded Joints of Copper and Stainless Steel <i>Darina Kaisheva, Angel Anchev, Vladimir Dunchev, Borislav Stoyanov, Milka Atanasova, Stefan Valkov, Maria Ormanova, Vladimir Todorov, Georgi Kotlarski, Stanislava Rabadzhiyska</i>
*P-P-5	Physicochemical and magnetic study of Dy-123 and Gd-123 bulk samples doped with nano Fe_3O_4 <i>Angelina Stoyanova-Ivanova, Svetoslav Kolev, Violeta Petrova, Ognyan Petkov, Lan Maria Tran, Michał Babij, Andrzej Zaleski, Valdek Mikli, Daniela Kovacheva</i>
P-P-6	Material and Optomechanical Characteristics of Polymers in Optical Design <i>Radostin Kasarov, Stefka Kasarova, Nina Sultanova</i>
P-P-7	Impedimetric response of phospholipid Langmuir-Blodgett films to methanol vapors <i>Todor Vlakhov, Georgi Hadjichristov, George Ivanov, Yordan Marinov</i>

Geography, Ecology and Environmental Protection	
P-GEEP-1	New data on the pteromalid fauna (Hymenoptera: Pteromalidae) associated with foliage of the Norway spruce, <i>Picea abies</i> (L.) H. Karst., from Bulgaria <i>Ivaylo Todorov, Mircea-Dan Mitroiu</i>
P-GEEP-2	Zoogeographical subdivision of Bulgaria based on the distribution of herpetofauna <i>Alexander Pulev, Lidia Sakelarieva</i>
P-GEEP-3	State and perspectives of citizen science for invasive alien species in Bulgaria <i>Rumen Tomov</i>
P-GEEP-4	Assessment of the motivation for participation in citizen science initiatives for invasive alien species in Bulgaria <i>Elena Tsvetkova, Galin Milchev, Hristina Stefanova</i>
P-GEEP-5	Soil magnetic susceptibility properties as indicators of heavy metals pollution in Bobov dol Thermal Power plant area <i>Miroslav Ivanov, Konstantin Tyufekchiev</i>

Mathematics	
P-M-1	Constructing of an optimal portfolio on the Bulgarian stock market using hybrid genetic algorithm for pre and post Covid-19 periods <i>Miroslava Ivanova, Lilko Dospatliev</i>
P-M-2	Air pollution during Covid-19 pandemic: exploration in the Bulgarian city of Stara Zagora using interrupted time series ARMA model <i>Miroslava Ivanova, Lilko Dospatliev</i>

Informatics	
P-I-1	The Importance of Biological Databases in modeling of structure-activity relationship <i>Fatima Sapundzhi, Tatyana Dzimbova</i>
P-I-2	Computer modeling and model selection in bioinformatics, <i>Radoslav Mavrevski, Metodi Traykov</i>

Technical Sciences	
P-TS-1	Automatic Frequency Release Realized by Programmable Logic Controller UNITRONICS V1210 Cancelled <i>Gergana Kalpachka, Ventsislav Kalpachki</i>
P-TS-2	An android-based mobile application giving information for weather in real-time <i>Fatima Sapundzhi, Milosh Mladenov</i>
P-TS-3	Smart home automation based on Z-Wave technology <i>Fatima Sapundzhi</i>
P-TS-4	Optimization of the microbial production of 2,3-butanediol from glucose by <i>Bacillus licheniformis</i> 24 <i>Lidia Tsigoriyna, Dimitar Ganchev, Penka Petrova, Kaloyan Petrov</i>

Methodology in Education	
P-ME-1	Results of the Pedagogical Observation and Survey of Students, Teachers and Students-Future Teachers Who Have Participated in Physics Teaching with Using Modern Educational Technologies Cancelled <i>Gergana Kalpachka</i>
P-ME-2	Multimedia Technologies in Physics Teaching <i>Gergana Kalpachka</i>
P-ME-3	An Integrated Approach to Teaching the Topic Light and Colors from the Seventh Grade Physics Syllabus <i>Radost Vassileva</i>

Special session "Low-carbon energy for transport and domestic use"	
P-SS-1	Cultivation, Isolation and Identification of Thermophilic Microorganisms and their Use for Redox Processes in Fuel Cells <i>Nadya Armenova, Dragomir Yankov, Stefan Stefanov, Elena Razkazova-Velkova</i>
P-SS-2	Study of novel carbon materials for sulphur oxidation/reduction reactions <i>George Pchelarov, Dzhamal Uzun, Aleksandar Tsanev, Adriana Gigova, Marinela Dimitrova, Ognian Dimitrov, Nadezhda Dermendzhieva, Elena Razkazova-Velkova, Konstantin Petrov</i>
P-SS-3	Membraneless Fuel Cells for Remediation of Sulfide and Nitrate Contaminated Fluxes <i>Stefan Stefanov, Elena Razkazova-Velkova, Tsvetomila Parvanova-Mancheva</i>
P-SS-4	Structured Zirconium Catalyst for Electrochemical Oxidation of Sulfide Ion <i>Nadezhda Dermendzhieva, Dzhamal Uzun, Elena Razkazova-Velkova, Konstantin Petrov, George Pchelarov, Ljutzkan Ljutzkanov</i>
P-SS-5	<i>Ab initio</i> study on development of a BOD/COD biosensor <i>Nikolay Vitanov, Elitsa Chorbadzhiyska, Mario Mitov, Yolina Hubenova</i>
P-SS-6	NiW- and NiMo-modified graphitized paper as potential cathodes for Microbial Electrolysis Cells <i>Elitsa Chorbadzhiyska, Mario Mitov, Yolina Hubenova</i>
P-SS-7	Electrochemical performance of nanotube sodium titanate in post Li- ion cells <i>Svetlana Veleva, Antonia Stoyanova, Radostina Stoyanova</i>