

# 10th Jubilee International Conference of FMNS



**FMNS-2023**

***14 - 18.06.2023, 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 (14.06.2023)**

13:00 – 18:30

University Conference Centre “Bachinovo”

### **Opening Ceremony (15.06.2023)**

10:00 – 10:30

Central Auditorium of Conference Center

### **Plenary Lectures (15.06.2023)**

Central Auditorium of Conference Center

Chairman: Assoc. Prof. Lidia Sakelarieva, PhD

**10:30 – 11:15**

**Prof. Boštjan Genorio - University of Ljubljana, Slovenia**  
**“Electrosynthesis of Hydrogen Peroxide using Graphene derivatives”**

**11:15 – 12:00**

**Acad. Oleg Mushkarov - Bulgarian Academy of Science, Bulgaria**  
**“History and the present state of the well-known Sendov hypothesis for critical distribution points of a polynomial with complex coefficients”**

### **Plenary Lectures (16.06.2023)**

Central Auditorium of Conference Center

Chairman: Assoc. Prof. Lidia Sakelarieva, PhD

**10:00 – 10:45**

**Dr. Manfred Schütze - Otto-von-Guericke University Magdeburg, Germany**  
**"Which model is best for me? - Some examples from urban water engineering"**

**10:45 – 11:30**

**Assoc. Prof. Tatyana Kutsarova – Bulgarian Academy of Science, Bulgaria**  
**“Hexaferrites – single phase magneto-electric multiferroics”**

**11:30 – 12:15**

**Prof. Andeas G. Tzakos – University of Ioannina, Greece**  
**“Inhibition of the angiotensin II type 2 receptor AT2R is a novel therapeutic strategy for glioblastoma”**

**Section sessions: 15 - 16.06.2023**

13:30 - 18:00

University Conference Center "Bachinovo"

**Poster sessions (Physics): 15.06.2023**

14:30 - 15:30

**Poster sessions (all other sections): 16.06.2023**

18:00 - 19:30

**Special sessions**

**"STEAM Education - Reality and Perspectives"**

**16.06.2023**

14:00 - 15:30

**Conference Hall**

**Workshop of project № KP-06-H67/6 – 12.12.2022**

**"Bioelectrochemical systems for organic pollutants remediation"**

**16.06.2023**

9:00 - 18:00

**Hall 3**

**Welcome party**

**18:00 – 15.06.2023**

University Conference Center "Bachinovo"

**Official dinner**

**19:30 – 16.06.2023**

University Conference Center "Bachinovo"

**Social program**

**17.06.2023**

**Section: Chemistry**  
**Hall 4**

<b>Thursday, June 15<sup>th</sup></b>	
Chairman: <b>Assoc. Prof. Zhiuko Velkov</b>	
13:30-13:45	<b>O-C-1</b> Ferrocene ligands with Sb-donor groups <i>Petr Stepnicka</i>
13:45-14:00	<b>O-C-2</b> Proton Conductivity in Solids – Determination of Proton Transfer Trajectory in Proton Conductors by In-situ X-Ray Powder Diffraction <i>David Havlíček, Jiří Plocek, Róbert Gyepes</i>
14:00-14:15	<b>O-C-3</b> X-RAY fluorescence analysis of zeolitic tuffs from Serbia <i>Vesna Stankov Jovanovic, Violeta Mitić, Jelena Nikolić, Dragan Djordjević, Slobodan Čirić, Miloš Rajković</i>
14:15-14:30	<b>O-C-4</b> Study on Natural and Modified zeolites from Bulgaria and Serbia <i>Mitko Stoev, Bostjan Genorio, Vesna Stankovic-Jovanovic</i>
14:30-14:45	<b>O-C-5</b> Evaluation of some chemical characteristics of spirulina from different manufacturers <i>Krastena Nikolova, Nadejda Petkova, Ginka Antova, Jana Petkova, Galia Gentscheva</i>
14:45-15:00	<b>O-C-6</b> Chemical composition and optical properties of refined sunflower oil with added various oils <i>Galia Gentscheva, Nadejda Petkova, Krastena Nikolova, Aleksandar Pashev, Tinko Evtimov</i>
Coffee break	
Chairman: <b>Assoc. Prof. Mitko Stoev</b>	
15:30-15:45	<b>O-C-7</b> Theoretical study of hepatic metabolic activation of oxidized propyl sulfide <i>Neli Koicheva, Yana Koleva, Yordanka Tasheva</i>
15:45-16:00	<b>O-C-8</b> Effectiveness of Glycerol, DMSO and Trehalose in the process of cryopreservation of drone semen from the species <i>Apis mellifera</i> <i>Tsvetan Tsvetkov, Nadya Petrova, Hristina Blagova, Denica Daskalova, Detelina Vitanova, Rositsa Shumkova</i>
16:00-16:15	<b>O-C-9</b> Biochemical Secretome Analysis of Mesenchymal Stem Cell Conditioned Media and Their Use in Treatment of Women with Diminished Ovarian Reserve <i>Nadya Petrova, Tsvetomira Dimitrova</i>
16:15-16:30	<b>O-C-10</b> Microbial fuel cell as a biosensor for monitoring the organic load of wastewater <i>Nikolay Vitanov, Elitsa Chorbadzhiyska, Yolina Hubenova, Mario Mitov</i>
16:30-16:45	<b>O-C-11</b> Investigation of the properties of pure and doped thin ZnO films obtained by spray pyrolysis technique <i>Pavlina Bancheva, Vesko Zhelev, Plamen Petkov, Tamara Petkova</i>
16:45-17:00	<b>O-C-12</b> Inorganic Salts of Aminoguanidines – Crystal Structures, Vibrational Spectra and Optical Properties <i>Ivan Nemeč, Sona Kohutekova, Irena Matulkova, Ivana Cisarova, Zorka Machackova, Petr Nemeč</i>

<b>Friday, June 16<sup>th</sup></b>	
Chairman: <b>Assist. Prof. Petranka Petrova</b>	
13:30-13:45	<b>O-C-13</b> Antioxidant Activity of Arylhydrazone Derivatives of Indole Acetic acid <i>Miroslav Marinchev, Nadya Hristova-Avakumova, Neda Anastassova, Maria Argirova, Denitsa Yancheva</i>
13:45-14:00	<b>O-C-14</b> In vitro Antioxidant effect of Unsubstituted Benzimidazole Derivatives <i>Stefan Federchev, Maria Argirova, Liliya Atanasova, Nadya Hristova-Avakumova, Denitsa Yancheva</i>
14:00-14:15	<b>O-C-15</b> The Antimicrobial and Hemolytic Activity of Various Heterocyclic N-oxide Series <i>Nurgali Akylbekov, Elena Chugunova, Vladimir Samsonov, Alexandra Voloshina, Alexander Burirov, Nurbol Appazov, Rakhmetulla Zhapparbergenov, Rakhymzhan Turmanov, Banu Diyarova, Mukhtar Zhanakov</i>
14:15-14:30	<b>O-C-16</b> Relative molecular mass and relationship to other natural sciences <i>Ruska Draganova-Hristova, Snejana Iordanova</i>
14:30-14:45	<b>O-C-17</b> Structural requirements of angiotensin receptor: preferred modifications for antagonist design <i>Tatyana Dzimbova, Atanas Chapkanov</i>
14:45-15:00	<b>O-C-18</b> Evaluation of measurement uncertainty associated with the sample preparation procedure <i>Ava Amideina, Petranka Petrova, Mitja Kolar, Jernej Imperl, Petko Mandjukov</i>
Coffee break	

### Section: Physics Hall 3

<b>Thursday, June 15<sup>th</sup></b>	
Chairman: <b>Assoc. Prof. Lyuben Ivanov</b>	
13:30-13:45	<b>O-P-1</b> Investigations of Giant Monopole Resonance and Nuclear Incompressibility in Spherical Nuclei <i>Yordan Katsarov, Mitko Gaidarov, Martin Ivanov, Anton Antonov</i>
13:45-14:00	<b>O-P-2</b> 5-Fluorouracil encapsulated chitosan microspheres <i>Sofia Milenkova, Svetoslav Tashkov, Nikolay Zahariev, Bissera Pilicheva, Maria Marudova</i>
14:00-14:15	<b>O-P-3</b> Chitosan/rosehip seed oil multicomponent edible films <i>Biser Gechev, Maria Marudova, Angel Iliev, Gabor Zsivanovits</i>
14:15-14:30	<b>O-P-4</b> Theoretical and kinetic parameters in oxidative cleaning of oil fractions <i>Yordanka Tasheva</i>
Coffee break	

**Section: Geography  
Hall 8**

<b>Thursday, June 15<sup>th</sup></b>	
Chairman: <b>Assoc. Prof. Krasimir Stoyanov</b>	
13:30-13:45	<b>O-G-1</b> How to publish in Journal of the Bulgarian Geographical Society: guidelines and submission demonstration <i>Hristina Prodanova</i>
13:45-14:00	<b>O-G-2</b> Trend analysis of water discharge in the Kutinska River Basin, Serbia <i>Milena Gocić, Nataša Martić Bursać, Ljiljana Stričević</i>
14:00-14:15	<b>O-G-3</b> The Significance of Relief Characteristics in Sustainable Development of Mountain Regions. A Case Study: The Mountain Šljivovička Planina and its Foothill in Eastern Serbia <i>Jelena Živković, Tatjana Djekić, Marija Bratić</i>
14:15-14:30	<b>O-G-4</b> Europe's Southernmost Perennial Glacier Found in Nemercka Mountain, Southern Albania <i>Emil Gachev, Martin Iliev, Georgi Gachev, Erald Meshini, Simeon Matev</i>
14:30-14:45	<b>O-G-5</b> State of the surface waters in the Mesta River basin after the reclamation of the "Eleshnitsa" uranium deposit <i>Nadezhda Nikolova</i>
14:45-15:00	<b>O-G-6</b> Mining as an anthropogenic source of pollution in Bosilegrad municipality <i>Milena Milenova, Ivan Drenovski</i>
Coffee break	
Chairman: <b>Assoc. Prof. Emil Gachev</b>	
15:30-15:45	<b>O-G-7</b> Physical Geographic Characteristics of the Hadzhidimovo Gorge (South-Western Bulgaria and Northern Greece) <i>Krasimir Stoyanov, Galina Bezinska, Alexander Pulev</i>
15:45-16:00	<b>O-G-8</b> Drought Hazard in Bulgaria in XX and XXI century <i>Mariyana Nikolova, Miroslav Ivanov</i>
16:00-16:15	<b>O-G-9</b> Multi criteria GIS based flood susceptibility mapping in the area of Berkane city, Morocco <i>Miroslav Ivanov, Imad Zerhoudi, Konstantin Tyufekchiev</i>
16:15-16:30	<b>O-G-10</b> GIS based flood susceptibility mapping in the area of Port Nador, Morocco <i>Miroslav Ivanov, Lamiae El Hadri, Konstantin Tyufekchiev</i>
16:30-16:45	<b>O-G-11</b> Remote Sensing based monitoring to Assess Water Quality of Lamiae port Lagune, Morocco <i>Miroslav Ivanov, Ouïam El Mekki, Konstantin Tyufekchiev</i>

<b>Friday, June 16<sup>th</sup></b>	
Chairman: <b>Assoc. Prof. Emilia Patarchanova</b>	
13:30-13:45	<b>O-G-12</b> Trends and challenges for the health system in Kyustendil region <i>Emilia Patarchanova, Gergana Nikolova</i>
13:45-14:00	<b>O-G-13</b> Education Infrastructure in the Kyustendil Region - Current State and Trends <i>Gergana Nikolova, Emilia Novachka-Girginova</i>
14:00-14:15	<b>O-G-14</b> Challenges in development and energy security of peripheral areas <i>Plamen Patarchanov, Emilia Patarchanova</i>
14:15-14:30	<b>O-G-15</b> The effect of COVID-19 on poverty in Bulgaria: mapping and analysis <i>Galina Bezinska, Krasimir Stoyanov</i>
14:30-14:45	<b>O-G-16</b> Demographic profile of the border municipalities of the Southwest region <i>Vasil Pandurski, Emilia Patarchanova</i>
14:45-15:00	<b>O-G-17</b> Digital marketing strategies for Black Friday and Christmas <i>Vladimir Karadzhov</i>
Coffee break	

**Section: Ecology and Environmental Protection  
Hall 9**

<b>Thursday, June 15<sup>th</sup></b>	
Chairman: <b>Assoc. Prof. Lidia Sakelarieva</b>	
13:30-13:45	<b>O-EEP-1</b> Are humans allies or opponents of nature? <i>Ryszard Sadowski</i>
13:45-14:00	<b>O-EEP-2</b> Exploitation of common resources – simple reasons to be different <i>Janusz Uchmański</i>
14:00-14:15	<b>O-EEP-3</b> Hidden diversity of fungi parasitizing ladybird beetles in the Canary Islands <i>Piotr Ceryngier, Jerzy Romanowski, Danny Haelewaters</i>
14:15-14:30	<b>O-EEP-4</b> Strip tillage and conventional sugar beet cultivation: do they have the same effect on the density and structure of soil nematode communities? <i>Krassimira Ilieva-Makulec, Dominika Dymitrowicz</i>
14:30-14:45	<b>O-EEP-5</b> The tributaries contribution of PAHs micro-pollution in Nišava River <i>Vesna Stankov Jovanović, Violeta Mitić, Jelena Nikolić, Slobodan Čirić, Goran Petrović, Aleksandra Đorđević, Milan Mitić</i>
Coffee break	
Chairman: <b>Assoc. Prof. Emilia Varadinova</b>	
15:30-15:45	<b>O-EEP-6</b> Conservation of fish species from Annex 2 of the Habi-tats Directive in protected sites of the Natura 2000 Network along the Bulgarian section of the Danube River – modern perspective <i>Luchezar Pehlivanov, Apostolos Apostolou</i>
15:45-16:00	<b>O-EEP-7</b> Determination of the concentration of particulate matters in the air in Blagoevgrad Municipality <i>Veselina Dalgaheva, Miroslav Ivanov, Emilia Varadinova</i>
16:00-16:15	<b>O-EEP-8</b> Methodological Approach for Long-term Ecological Research in Forest sites <i>Toma Tonchev, Svetoslav Anev, Violeta Dimitrova, Sonya Damyanova</i>
16:15-16:30	<b>O-EEP-9</b> Current state of population of autochthonous (Stanushina, Plovdivina, Prokupec, Temjanika) varieties of grapevine in the Republic of North Macedonia <i>Aleksandar Klincarov, Konstantin Tyufekchiev, Violeta Dimovska</i>

<b>Friday, June 16<sup>th</sup></b>	
Chairman: <b>Assist. Prof. Miroslav Ivanov</b>	
13:30-13:45	<b>O-EEP-10</b> From sites to a research infrastructure: establishing network level standard observations for the Bulgarian Long-Term Ecosystem Research Network <i>Kremena Gocheva, Radka Fikova, Kostadin Katrandzhiev, Lyudmila Lozanova, Valeri Georgiev, Vladimir Petrov, Tsvetan Tsvetanov, Petar Dimov, Tzvetan Zlatanov, Emilia Varadinova, Ventsislav Karamfilov, Nevena Ivanova, Kremena Stefanova, Sonya Damyanova, Miglena Zhiyanski, Stela Lazarova, Svetla Bratanova-Doncheva</i>
13:45-14:00	<b>O-EEP-11</b> Ecology-Health-City <i>Maria Shishmanova, Veselina Dalgacheva</i>
14:00-14:15	<b>O-EEP-12</b> The Green City – evaluation of the urban environment to define the city as green <i>Veselina Dalgacheva, Maria Shishmanova</i>
14:15-14:30	<b>O-EEP-13</b> Moral issues in the science of ecology: technological directions <i>Nikolai Mihailov, Lidia Sakelarieva</i>
14:30-14:45	<b>O-EEP-14</b> The Caspian Whip Snake, <i>Dolichophis caspius</i> (Gmelin, 1789) (Reptilia: Colubridae), in Bulgaria: distribution and activity <i>Alexander Pulev, Lidia Sakelarieva, Emanuil Mitrevichin, Borislav Naumov, Georgi Popgeorgiev</i>
Coffee break	
Chairman: <b>Assist. Prof. Veselina Dalgacheva</b>	
15:30-15:45	<b>O-EEP-15</b> Seasonal activity of <i>Xerotyphlops vermicularis</i> (Merrem, 1820) (Reptilia: Typhlopidae) in Bulgaria, with first records of autumn activity <i>Alexander Pulev, Lidia Sakelarieva, Emanuil Mitrevichin</i>
15:45-16:00	<b>O-EEP-16</b> The populations of <i>Testudo hermanni boettgeri</i> and <i>T. graeca ibera</i> (Testudines: Testudinidae) in the northwestern foothills of the Pirin Mountains, Bulgaria <i>Emanuil Mitrevichin, Lidia Sakelarieva, Hristo Peshev, Alexander Pulev</i>
16:00-16:15	<b>O-EEP-17</b> Important Vulture Sites in the Middle East revealed from GPS tracking migrating Griffon Vultures from the Balkans <i>Hristo Peshev, Emilian Stoynov, Emanuil Mitrevichin, Atanas Grozdanov, Konstantin Tyufekchiev</i>



**Sections: Mathematics and Informatics**  
**Hall 7**

<b>Thursday, June 15<sup>th</sup></b>	
Chairman: <b>Prof. Vitor Fernandes</b>	
13:30-13:45	<b>O-MI-1</b> About the Solutions of Modified Lorenz System <i>Biljana Zlatanovska, Donco Dimovski, Mirjana Vitanova</i>
13:45-14:00	<b>O-MI-2</b> Products of Distributions in Colombeau Algebra <i>Marija Miteva, Limonka Lazarova, Biljana Zlatanovska, Natasha Stojkovicj</i>
14:00-14:15	<b>O-MI-3</b> Modeling, Analysis and Simulation of Tuberculosis <i>Natasha Stojkovicj, Biljana Zlatanovska, Maja Paneva, Limonka Lazarova</i>
14:15-14:30	<b>O-MI-4</b> Using ChatGPT for numerical solution of first and second order ordinary differential equations <i>Saso Koceski, Natasa Koceska, Limonka Lazarova, Marija Miteva, Biljana Zlatanovska</i>
14:30-14:45	<b>O-MI-5</b> Social Network Development Using the Firebase Platform <i>Verica Ivanova, Limonka Lazarova, Natasha Stojkovicj, Cveta Martinovska Bande</i>
14:45-15:00	<b>O-MI-6</b> Theoretical proof for the number of errors that one linear code detects when linear quasigroups of order 4 are used for coding <i>Natasha Ilievska</i>
15:00-15:15	<b>O-MI-7</b> Simulation of the number of surely detected errors of an error-detecting code <i>Natasha Ilievska</i>
Coffee break	
Chairman: <b>Prof. Joerg Koppitz</b>	
15:45-16:00	<b>O-MI-8</b> Chain relation in a family of sets and chain function <i>Zoran Misajleski, Emin Durmishi</i>
16:00-16:15	<b>O-MI-9</b> Methods of solving systems of linear equations $m \times n$ , $m=1,2,3$ ; based on the geometrical interpretations of the equations <i>Zoran Misajleski, Daniel Velinov, Aneta Velkoska</i>
16:15-16:30	<b>O-MI-10</b> Geometric properties of a free boundary problem <i>Martin Lukarevski</i>
16:30-16:45	<b>O-MI-11</b> Predator-prey interactions under the Allee effect in prey and multiple predator harvesting strategies <i>Petar Ćirković</i>
16:45-17:00	<b>O-MI-12</b> One result about products of distributions and ultradistributions <i>Petar Sokoloski</i>
17:00-17:15	<b>O-MI-13</b> Some results for the serial RL parallel C circuit using Laplace transform <i>Jasmina Buralieva, Maja Paneva</i>
17:15-17:30	<b>O-MI-14</b> Abelian-and Tauberian-type results for the generalized Stockwell and wavelet transforms <i>Jasmina Buralieva</i>

<b>Friday, June 16<sup>th</sup></b>	
Chairman: <b>Assoc. Prof. Ilinka Dimitrova</b>	
13:30-13:45	<b>O-MI-15</b> Conformable Evolution Inclusions With Causal Operators <i>Tzanko Donchev, Iveta Nikolova, Mikhail Kolev, Boiana Garkova, Alina Lazu</i>
13:45-14:00	<b>O-MI-16</b> Evolution Inclusions with Non Fixed Times of Impulses <i>Tzanko Donchev, Nikolay Kitanov, Dimitar Kolev, S. Iftikhar, Alina Lazu</i>
14:00-14:15	<b>O-MI-17</b> On Some Applications of Linear Problems in Economy <i>Boiana Garkova, Sashka Kandilarova, Mikhail Kolev, Iveta Nikolova</i>
14:15-14:30	<b>O-MI-18</b> On Some Nonlinear Problems in Economy <i>Sashka Kandilarova, Mikhail Kolev, Nikolay Kitanov, Iveta Nikolova, Sevasti Georgiadou</i>
14:30-14:45	<b>O-MI-19</b> On Consumer Demand and Utility Optimization <i>Sevasti Georgiadou, Mikhail Kolev, Iveta Nikolova, Sashka Kandilarova</i>
14:45-15:00	<b>O-MI-20</b> On some stochastic applications to chemical problems <i>Iveta Nikolova, Krasimir Yordzhev, Valeri Vachkov, Mikhail Kolev, Ginka Paunova, Radostina Genova-Koleva</i>
15:00-15:15	<b>O-MI-21</b> Deep Learning for Automated Diagnosis of Radiological Images: A Comprehensive Review of Neural Networks and Mathematical Approaches <i>Irina Naskinova, Mikhail Kolev</i>
Coffee break	
Chairman: <b>Assoc. Prof. Mikhail Kolev</b>	
15:45-16:00	<b>O-MI-22</b> On some monoids of partial isometries on graphs <i>Vitor Hugo Fernandes</i>
16:00-16:15	<b>O-MI-23</b> The rank of the semigroup of order-, fence-, and parity-preserving partial injections on a finite set <i>Apatsara Sareeto, Joerg Koppitz</i>
16:15-16:30	<b>O-MI-24</b> The rank of the inverse semigroup of all partial automorphisms on a finite crown <i>Ilinka Dimitrova, Joerg Koppitz</i>
16:30-16:45	<b>O-MI-25</b> Lucky Rooted Trees <i>Joerg Koppitz</i>
16:45-17:00	<b>O-MI-26</b> A Class of Integer 3 x 3 Matrices Related to Numerical Semigroups with Embedding Dimension 4 <i>Merita Bajrami, Donco Dimovski, Violeta Angjelkoska</i>
17:00-17:15	<b>O-MI-27</b> Some fixed point theorems in (3,2)-metric spaces <i>Tomi Dimovski, Donco Dimovski</i>
17:15-17:30	<b>O-MI-28</b> Expanding the capabilities of robot NAO to enable human-like communication with children with speech and language disorders <i>Anna Andreeva, Anna Lekova, Paulina Tsvetkova, Miglena Simonska</i>

**Section: Methodology in Education**  
**Conference Hall**

<b>Thursday, June 15<sup>th</sup></b>	
Chairman: <b>Prof. Daniela Dureva</b>	
13:30-13:45	<b>O-ME-1</b> Using Olympic Grading Systems in Education of Programming <i>Krassimir Manev</i>
13:45-14:00	<b>O-ME-2</b> Diagnostics of the intellectual and personal reflection in the process of biology and health education (Second stage of high school education) <i>Isa Hadjali</i>
14:00-14:15	<b>O-ME-3</b> The Effect of Context-Based Chemistry Learning on Student' Motivation and Engagement <i>Vesela Pavlova, Alexandria Gendjova</i>
14:15-14:30	<b>O-ME-4</b> Application of digital technologies in the chemistry classroom: teachers' attitudes in 2019 and 2022 <i>Martina Tsenova, Milena Kirova</i>
14:30-14:45	<b>O-ME-5</b> Changes in motivation to learn chemistry through independent group activities <i>Martina Evgenieva, Milena Kirova</i>
14:45-15:00	<b>O-ME-6</b> Chemistry lesson plan based on 6C's model of CLIL <i>Irina Andonova, Elena Boadjieva</i>
<b>Coffee break</b>	
Chairman: <b>Prof. Krassimir Manev</b>	
15:30-15:45	<b>O-ME-7</b> Information technology as a means of strengthening the competences acquired by the student from the topic "Numbers from 101 to 1000" <i>Vilislav Radev</i>
15:45-16:00	<b>O-ME-8</b> How to Increase Students' Interest in Mathematics - Challenging their Understanding of Mathematics Via Solving Problems <i>Stanislava Stoilova, Mikhail Kolev</i>
16:15-16:30	<b>O-ME-9</b> Teaching Computational Thinking with Python: Enhancing Mathematical Problem-Solving Skills in High School Students <i>Irina Naskinova, Gabriela Vasileva, Yana Vasileva, Mikhail Kolev, Iveta Nikolova</i>
16:30-16:45	<b>O-ME-10</b> Python Programming for Math Education: Fostering Logical Reasoning and Creativity in High School Students <i>Irina Naskinova, Gabriela Vasileva, Yana Vasileva, Iveta Nikolova, Mikhail Kolev</i>
16:45-17:00	<b>O-ME-11</b> The Power of Python for Developing Computational Problem-Solving: Integrating Coding into High School Math Curricula <i>Irina Naskinova, Gabriela Vasileva, Yana Vasileva, Mikhail Kolev, Iveta Nikolova</i>
17:00-17:15	<b>O-ME-12</b> A new view on the golden ratio <i>Stanislava Stoilova, Mikhail Kolev</i>
17:15-17:30	<b>O-ME-13</b> The Mathematical competition "Beyond all standards" at the university <i>Mediha Topalova, Boyana Garkova</i>
17:30-17:45	<b>O-ME-14</b> The motivation of bilingual students in mathematics and information technology education <i>Silvena Stefanova-Milanova</i>

## **SPECIAL SESSIONS**

**Friday, June 16<sup>th</sup>**

**Special session**  
**"STEAM Education - Reality and Perspectives"**  
**Conference Hall**

<b>Friday, June 16<sup>th</sup></b>	
Chairman: <b>Assoc. Prof. Ralitsa Stanoeva</b>	
14:00-14:15	<b>O-ME-15</b> STEM <i>Najden Shivarov</i>
14:15-14:30	<b>O-ME-16</b> From steam to stream. <i>Ani Vasileva, Svetla Borisova, Nadejda Deyanova, Anna Jarova, Vanya Kaftandjieva</i>
14:30-14:45	<b>O-ME-17</b> CONCEPT ON STREAM EDUCATION IN ACCORDANCE WITH BULGARIAN CURRICULUM CONTENT OF 8-10TH CLASS <i>Nadezhda Rajcheva</i>
14:45-15:00	<b>O-ME-18</b> A SYNERGIC MODEL FOR STEAM LEARNING IN SCIENCES (FIRST HIGH SCHOOL STAGE) <i>Svetla Bukovska</i>
15:00-15:15	<b>O-ME-19</b> Natural zeolites in Green STEM model for education <i>Mitko Stoev</i>
15:15-15:30	<b>O-ME-20</b> Reflexion and STEM based education in biological education <i>Alexander Milushev</i>
15:30-15:45	<b>O-ME-21</b> STEM as a Math learning motivator <i>Aharon Goldreich, Elena Karashtranova</i>
15:45-16:00	<b>O-ME-22</b> Design Thinking Skills for Teachers <i>Daniela Tuparova, Boyana Garkova, Zarina Markova</i>
16:00	<b>Discussion</b> The participants can share good practices applied in the education.

### **Special session**

**Workshop of project № KP-06-H67/6 – 12.12.2022 " Bioelectrochemical systems for organic pollutants remediation "**

**16.06.2023**

9:00 - 18:00

**Hall 3**

## POSTER SESSION

<b>Chemistry</b>	
P-C-1	Micro elements determination in Rosa myriacantha DC. samples by an optimized and validated ICP OES method <i>Katarina Milenković, Jelena Mrmošanin, Stefan Petrović, Aleksandra Pavlović, Snežana Tošić, Bojan Zlatković, Ivana Rašić, Mišić Emilija, Pecev-Marinković</i>
P-C-2	Pharmacokinetic studies of selenium supplementation <i>Natasha Ristovska, Pece Sherovski</i>
P-C-3	Microbiologically Induced Corrosion of Copper Foil in Different Environments <i>Desislava Apostolova, Elitsa Chorbadzhiyska, Mario Mitov, Yolina Hubenova</i>
P-C-4	Reduced graphene oxide functionalized with metallic nanoparticles (Pt, Ni, Co) as a cathodic electrocatalyst for HER in microbial electrolysis cells <i>Elitsa Chorbadzhiyska, Galin Borisov, Ivo Bardarov, Eva Slavcheva, Mario Mitov, Yolina Hubenova</i>
P-C-5	Viability of pyrolyzed activated carbon felts as electrodes in sulfide-nitrate fuel cell <i>Stefan Stefanov, Ljutzkan Ljutzkanov, Elena Razkazova-Velkova</i>
P-C-6	Metal and Vulcan XC-72R carbon black nanocomposites for purification of organic pollutants <i>Ivelina Tsacheva, Adriana Gigova, Ognian Dimitrov, Mariela Dimitrova, Dzhamal Uzun</i>
P-C-7	Electrocatalytic studies of oxidation of organic contaminants in aqueous solution using ZrO <sub>2</sub> catalyst on biochar carbon <i>Dzhamal Uzun, Ljutzkan Ljutzkanov, Mariela Dimitrova, Adriana Gigova, Ognian Dimitrov, Stefan Stefanov, Elena Razkazova-Velkova, Konstantin Petrov</i>
P-C-8	Enhancement of the carbon felt anode performance in microbial fuel cell using carboxymethyl chitosan/polyaniline@ferrite nanocomposite for improving the generation bioelectricity and the elimination of COD <i>Mehrez E. El-Naggar, Bahaa A. Hemdan, Gamila E. El-Taweel, Sherief A. Al Kiey, Mario Mitov, Yolina Hubenova</i>
P-C-9	Comparison of two algal species of different genera from the perspective of their sustainable use <i>Stanislava Boyadzhieva, Flora Tsvetanova, Jose Coelho, Dragomir Yankov, Roumiana Stateva</i>
P-C-10	Green chemistry inspired solvents for the extraction of maleic-fumaric acid mix <i>Apostol Apostolov, Dragomir Yankov</i>
P-C-11	Modeling of lactic acid production by means of Lactiplantibacillus plantarum AC11S <i>Petya Popova – Krumova, Svetla Danova, Dragomir Yankov</i>
P-C-12	Biohydrogen production by means of newly isolated Clostridium beijerinckii 6A1 strain <i>Nadya Armenova, Dragomir Yankov</i>
P-C-13	Phenol tolerance of bacterial strains <i>Evgenia Vasileva, Tsvetomila Parvanova-Mancheva, Stefan Stefanov, Elena Razkazova-Velkova</i>
P-C-14	Iron-bearing wood material as peroxydisulfate and hydrogen peroxide activator for enhanced anthraquinone dye degradation <i>Miljana Radović Vučić, Miloš Kostić, Jelena Mitrović, Nena Velinov, Milica Petrović, Slobodan Najdanović, Aleksandar Bojić</i>
P-C-15	ZnFe-Layered double hydroxide for sorption of Methyl Orange: Kinetics, isotherm studies, and optimization of process parameters <i>Miloš Kostić, Kristina Filipović, Miljana Radović Vučić, Nena Velinov, Slobodan Najdanović, Danijela Bojić, Aleksandar Bojić</i>
P-C-16	The influence of the SARS COV-2 virus infection on the serological level of IgM antibodies in patients with Infectious Mononucleosis <i>Anamarija Shram, Natasa Ristovska</i>

P-C-17	Spectral and structural characterization of amino acid salts for application in non-linear optic <i>Atanas Chapkanov, Tatyana Dzimbova, Kiril Kuntsev, Tzonko Kolev</i>
P-C-18	A Study of the Metabolic Transformations of $\alpha$ -Phellandrene from Essential Oils in the Liver <i>Milen Dimov, Yana Koleva</i>
P-C-19	Possible Hepatic Metabolic Activation of Methylchavicol from the essential oil composition <i>Yana Koleva, Milen Dimov</i>
P-C-20	Validation of titration method for determination of BOD5/Dissolved O <sub>2</sub> <i>Ava Amideina, Kiril Chuchkov, Petko Mandjukov</i>
P-C-21	Radical Scavenging Activity of Melatonin and its Metabolite <i>Gergana Ivanova, Kemile Robova, Valeri Vachkov, Zhivko Velkov</i>
P-C-22	Prediction of skin sensitivity of beta-caryophyllene from essential oil <i>Elisaveta Todorova-Koynova, Nadezhda Dimitrova, Desislava Sabeva, Yana Koleva</i>
P-C-23	Possible hepatic effects of the beta-caryophyllene from essential oils <i>Elisaveta Todorova-Koynova, Nadezhda Dimitrova, Desislava Sabeva, Yana Koleva</i>
P-C-24	Potential Hepatic Transformations of Intralipid <i>Yana Koleva, Viktoria Trifonova</i>
P-C-25	Toxicological Evaluation of Intralipid <i>Victoria Trifonova, Yana Koleva</i>
P-C-26	Computational studies for opioid receptors and potent bioactive opioid ligands: computer modeling and molecular docking analysis <i>Fatima Sapundzhi, Tatyana Dzimbova, Metodi Popstoilov</i>
P-C-27	Novel boldine amides and their in vitro inhibitory effects on mushroom tyrosinase <i>Maya Chochkova, Boyka Stoykova, Petranka Petrova, Martin Štícha, Galya Ivanova</i>
P-C-28	Assessment and Comparison of Heavy Metal Contamination in Surface Sediments from Two Urban Rivers <i>Jernej Imperl, Mitja Kolar, Petranka Petrova</i>
P-C-29	Whey Derived Bioactive Peptides with ACE Inhibitory Properties <i>Boryana Yakimova, Lili Dobрева, Yuliana Raynova, Svetla Danova, Ivanka Stoineva</i>
P-C-30	Synthesis and Antioxidant Activity of Some Aminoadamantanes <i>Antoniya Stoymirska, Radoslav Chayrov, Almira Georgieva, Albena Alexandrova, Ivanka Stankova</i>
P-C-31	Hydrolytic stability of memantine analogues with nootropics <i>Anna-Mariya Ivanova, Antoniya Stoymirska, Radoslav Chayrov, Ivanka Stankova</i>
P-C-32	Neurological Recovery-Promoting in Induced Brain Injury by Memantine Derivative <i>Antoniya Stoymirska, Radoslav Chayrov, Çetin Hakan Karadağ, Ivanka Stankova</i>
P-C-33	The science of miracles - Chemistry <i>Elitsa Chorbadzhiyska, Katerina Angelova, Yordan Angelov</i>
P-C-34	The quantitative Determination of Proanthocyanidins Concentrations in Vicia faba Cultivars from Serbia <i>Violeta Mitic, Andrea Ivkovic, Jelena Nikolic, Goran Petrovic, Jasmina Milenkovic, Snezana Andjelkovic, Vesna Stankov Jovanovic</i>
P-C-35	Antioxidant and antimicrobial activities of Lactarius sanguifluus <i>Violeta Mitic, Jelena Nikolic, Goran Petrovic, Aleksandra Djordjevic, Marija Dimitrijevic, Vesna Stankov Jovanovic</i>
P-C-36	Analysis of the docking results of some selective MOR ligands <i>Tatyana Dzimbova, Fatima Sapundzhi, Peter Milanov</i>
P-C-37	Computational modeling of compounds that interact with opioid and cannabinoid receptors <i>Fatima Sapundzhi, Tatyana Dzimbova, Metodi Popstoilov</i>
P-C-38	Clinoptilolite as sorbent for sample preparation in PAH analysis <i>Milica D. Nikolić, Nikola Radisavljević, Teodora Petreski, Milica G. Nikolić, Jelena Nikolić, Violeta Mitić, Vesna Stankov Jovanović</i>
P-C-39	ICP-OES Determination of Selenium in Flour Samples <i>Stefan Petrović, Denis Mitov, Đorđe Savić, Jelena Mrmošanin, Aleksandra Pavlović, Snežana Tošić</i>

P-C-40	Application of the new kinetic method for quantitative determination of herbicide 4-chloro-2-methylphenoxy acetic acid in baby food samples using SPE followed by HPLC method <i>Ana Miletic Ciric, Emilija Pecev-Marinkovic, Aleksandra Pavlovic, Snezana Tosic, Ivana Rasic Misic, Jelena Mrmosanin, Katarina Milenkovic</i>
P-C-41	Antioxidant activity of houseleek <i>Milan Mitić, Jelena Nikolić, Ivan Palić, Violeta Mitić, Marija Ilić, Vladan Djurić, Vesna Stankov Jovanović</i>
P-C-42	Antimicrobial activity of Hypericum perforatum L. essential oil <i>Aleksandra Djordjević, Goran Petrović, Jelena Stamenković, Violeta Mitić, Jelena Nikolić, Jovana Ickovski, Vesna Stankov Jovanović</i>
P-C-43	Chemical composition of the Anthriscus caucalis headspace volatiles <i>Aleksandra Djordjević, Goran Petrović, Jelena Stamenković, Violeta Mitić, Jelena Nikolić, Vladan Đurić, Vesna Stankov Jovanović</i>
P-C-44	Polycyclic aromatic hydrocarbons in soil- application of diatomaceous earth in sample preparation step <i>Milica D. Nikolić, Jovana Petrović, Mihajlo Halilović, Milijana Zlatković, Jelena Nikolić, Violeta Mitić, Vesna Stankov Jovanović</i>
P-C-45	The influence of the SARS COV-2 virus infection on the serological level of IgM antibodies in patients with Infectious Mononucleosis <i>Anamarija Shram, Natasha Ristovska</i>

<b>Physics</b>	
P-P-1	Frequency-tunable Stimulated Raman Scattering in quartz fibers <i>Lyuben Ivanov</i>
P-P-2	Composite materials based on nanosized ferrite for microwave application <i>Svetoslav Kolev, Todor Cholakov</i>
P-P-3	Laser synthesis and processing of composite nanostructures <i>Mihaela Koleva, Anna Dikovska, Nikolay Nedyalkov</i>
P-P-4	Laser-Assisted Synthesis of Water Colloidal Metallic Nanocomposites <i>Nadya Stankova, Anna Dikovska, Mihaela Koleva, Nikolay Nedyalkov, Daniela Karashanova</i>
P-P-5	Effect of Beam Power on the Structure and Mechanical Properties of Electron Beam Welded Cu / Al6082T6 Joints <i>Darina Kaisheva, Georgi Kotlarski, Vladimir Dunchev, Borislav Stoyanov, Maria Ormanova, Angel Anchev, Stefan Valkov, Vladimir Todorov, Milka Atanasova, Stanislava Rabadzhiyska</i>
P-P-6	Search for decay of the $^7\text{Be}$ nucleus in $^8\text{B}$ nucleus dissociation <i>Ralitsa Stanoeva</i>
P-P-7	Influence of chia gel on starch thermal transitions, measured by DSC during the storage of cakes <i>Dida Iserliyska, Gabor Zsivanovits, Angel Iliev, Maria Marudova</i>
P-P-8	Influence of chitosan-based composites on the properties of chemically modified polylactic acid films <i>Aleksandar Grigorov</i>
P-P-9	Sequential implementation of isoelectric precipitation followed by ultrafiltration for production of sunflower protein isolates <i>Angel Iliev, Maria Dushkova, Gabor Zsivanovits, Dida Iserliyska</i>
P-P-10	Benzydamine hydrochloride immobilization in multilayer structures based on lyophilized composite polylactic acid / poly( $\epsilon$ -caprolactone) substrates <i>Asya Viraneva, Maria Marudova, Aleksandar Grigorov, Temenuzhka Youcheva</i>
P-P-11	Chitosan/casein polyelectrolyte multilayers: effect of pH and ionic strength on film growth and morphology <i>Maria Marudova, Asya Viraneva, Aleksandar Grigorov, Temenuzhka Youcheva</i>



<b>Ecology and Environmental Protection</b>	
P-EEP-1	Trophic structure of the macrozoobenthos in the Bulgarian rivers <i>Emiliya Varadinova, Slavina Kocakova, Veselina Dalgacheva, Radka Fikova</i>
P-EEP-2	Comparative analysis of the structure of benthic macroinvertebrate communities in Maritsa River (Bulgaria) and Han River (South Korea) <i>Jiyoung Park, Lidia Sakelarieva, Emilia Varadinova</i>
P-EEP-3	Review of the impact of coal fired power plants (CFPP) on the status of surface waters in Bulgaria <i>Vanina Mitseva, Emilia Varadinova</i>
P-EEP-4	LTER-BG: Upgrading the distributed research infrastructure “Bulgarian Long-term Ecosystem Research Network” <i>Svetla Bratanova-Doncheva, Radka Fikova, Kremena Gocheva, Ventsislav Karamfilov, Tzvetan Zlatanov, Emilia Varadinova, Nevena Ivanova, Lachezar Pehlivanov, Kremena Stefanova, Sonya Damyanova, Miglena Zhiyanski, Yanka Videnova, Lyudmila Lozanova, Kostadin Katrandzhiev</i>
P-EEP-5	Intercropping of vegetables and ornamental plants in the regenerative agriculture context <i>Desislava Todorova</i>
P-EEP-6	Plasma technologies in seed germination <i>Desislava Todorova</i>
P-EEP-7	Ladybird beetle fauna of the Holy Cross Mountains region in Poland and its changes over time <i>Małgorzata Czaja, Marek Bidas, Jerzy Romanowski, Piotr Ceryngier</i>

<b>Informatics</b>	
P-I-1	An investigation of barriers and individual characteristics of e-commerce adoption by Greek elders <i>Vasileios Gerakis, Irena Atanasova</i>
P-I-2	The Impact of organizational culture on Teaching and learning processes during the Covid-19 Pandemic: South-west University “Neofit Rilski” case study <i>Irena Atanasova, Elena Karashtranova</i>
P-I-3	A Comparative Analysis of Advanced Encryption Standard (AES) and Rivest-Shamir-Adleman (RSA) Algorithm: Mathematical, Algorithmic, and Performance Comparison <i>Maria Mpitsi, Nina Sinyagina</i>
P-I-4	Exploring the Security of Cloud Computing: An Analysis of Threats and Countermeasures for Cloud Computing in the Era of Digital Transformation <i>Maria Mpitsi, Nina Sinyagina</i>
P-I-5	Degradation Recoloring CVD Deutan Image From Block SVD Watermark <i>Zoran Milivojevic, Bojan Prlincevic, Milan Cekic</i>
P-I-6	Estimation of emotional Normal/Boredom state by fundamental frequency trajectory analysis <i>Bojan Prlincevic, Zoran Milivojević, Vesna Simovic, Dijana Kostić</i>

<b>Methodology in Education</b>	
P-ME-1	Overview and development in the professional interests of graduate students <i>Nataliya Pavlova</i>
P-ME-2	Application of modern educational technologies in the teaching of physics in the lesson "Radioactivity" <i>Milena Slavkova, Elena Karashtranova, Ralitsa Stanoeva</i>
P-ME-3	Interactive GeoGebra simulations as a tool for teaching and learning chemistry <i>Vesna Stankov Jovanovic, Valentina Kostic, Tanja Sekulic</i>
P-ME-4	Fractal geometry in GeoGebra environment <i>Vesna Stankov Jovanovic, Tanja Sekulic</i>
P-ME-5	Designing a better person and a better society with the help of education and teaching mathematics and computer science in the dialogic approach <i>Simon Sultan</i>
P-ME-6	Promoting Environmental Literacy in teachers in a multicultural Education In Israel. <i>Farid Hamdan, Prof. Emiliya Patarchanova, Prof. Elka Yanakieva</i>
P-ME-7	Possibilities for teaching the Python language in junior high school <i>Krasimir Harizanov</i>