

Faculty of Natural Sciences

University of Ss. Cyril and Methodius in Trnava

The 8th International Scientific Conference  
Applied Natural Sciences 2023



**ANS 2023**

Programme



UNIVERZITA J. E. PURKYNĚ V ÚSTÍ NAD LABEM



18<sup>th</sup> – 20<sup>th</sup> of September 2023  
Donovaly, Slovakia

The 8<sup>th</sup> International Scientific Conference

**Applied Natural Sciences 2023**  
18th – 20th of September 2023, Donovaly, Slovakia

## PROGRAMME

### 18 September 2023 / Conference Day 1

11:00 – 19:00 Registration (Foyer)

14:30 – 15:00 Coffee Break (Foyer)

#### Conference Hall **Grand Residence**

15:00 – 15:30 **Opening**

Dean and Vice-Dean for Science and International Relations

15:30 – 17:00 **Invited plenary talks**

Chair: Josef Trögl

17:15 – 18:15 **Symposium Young Scientists – ePoster Session**

Scientific Committee: Jana Moravčíková, Peter Nemeček, Juraj Krajčovič

Time	Name
17:15 – 17:20	<b>Slavomír Adamec</b>
	<b>Determination of anthropogenic contamination in soil profiles in the geologically anomalous landscape of northwestern Bohemia</b> <i>Jan Evangelista Purkyně University, Czech Republic</i>
17:20 – 17:25	<b>Michaela Schorschová</b>
	<b>A detailed in silico analysis of the alpha-amylase family GH126 focused on its unique sequence-structural features</b> <i>Michaela Schorschová and Štefan Janeček</i> <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
17:25 – 17:30	<b>Anna Jurčová</b>
	<b>Determination of selected nitrosamines in pharmaceutical substances by GC-MS</b> <i>Anna Jurčová, Andrea Lančaričová and Andrea Purdešová</i> <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
17:30 – 17:35	<b>Michaela Červeňáková</b>
	<b>Magnetoactive complexes containing bioactive ligands. A theoretical study</b> <i>Ján Titiš and Michaela Červeňáková</i> <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
17:35 – 17:40	<b>Robert Ato Newton</b>
	<b>Impact of soil amendments on the production of <i>Miscanthus × giganteus</i> biomass at the slightly contaminated post-mining areas</b> <i>Robert Ato Newton, Valentina Pidlisnyuk and Aigerim Mamirova</i> <i>Jan Evangelista Purkyně University, Czech Republic</i>

Time	Name
17:40 - 17:45	<b>Adam Achs</b>
	<b>Plant RNA virus as a tool for the expression of foreign polypeptides</b> Adam Achs, Peter Alaxin, Miroslav Glasa and Zdeno Šubr <i>Biomedical Research Center of the Slovak Academy of Sciences, Slovakia</i>
17:45 - 17:50	<b>Lubomíra Jurečková</b>
	<b>Repeated-batch production of PHB by <i>Cupriavidus necator</i></b> Lubomíra Jurečková, Daniela Chmelová and Miroslav Ondrejovič <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
17:50 - 17:55	<b>Monika Lisinovičová</b>
	<b>Morphological response of amaranth plants (<i>Amaranthus</i> spp.) to selected toxic metals</b> Monika Lisinovičová, Monika Szabóová and Andrea Hricová <i>Institute of Plant Genetics and Biotechnology, Slovak Academy of Sciences, Slovakia</i>
17:55 - 18:00	<b>Lucie Buchbauerová</b>
	<b>The effects of different tree species on soil properties and soil development</b> Lucie Buchbauerová, Jan Frouz and Christian A. Lange <i>Charles University, Czech Republic</i>
18:00 - 18:05	<b>Aday Amirbekov</b>
	<b><i>Alnus glutinosa</i> and soil microbial community response to HCH contamination</b> Aday Amirbekov, Stanislava Vrchovecka, Jakub Riha, Ivan Petrik, David Friedecky, Ondrej Novak, Miroslav Cernik, Pavel Hrabak and Alena Sevcu <i>Technical University of Liberec, Czech Republic</i>
18:05 - 18:10	<b>Aigerim Mamirova</b>
	<b>Biochar- and PGR-assisted phytoremediation of complex contaminated sediments with <i>Paulownia tomentosa</i></b> Aigerim Mamirova and Valentina Pidlisnyuk <i>Jan Evangelista Purkyně University, Czech Republic</i>
18:10 - 18:15	<b>Lenka Vavrincová</b>
	<b>Green roof substrate amendment with sewage sludge biochar and its effect on chemical leaching: a field study</b> Martin Pipiška, Lenka Vavrincová, Jana Urbanová and Vladimír Frišták <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>

19:00 – 20:00 **Welcome Dinner (Diamond Hill Restaurant)**  
20:00 **Tour and beer tasting at Donovaly Brewery**

## 19 September 2023 / Conference Day 2

9:00 – 16:00 Registration (Foyer)

### Conference Hall Grand Residence

09:30 – 10:00 **Ján Hrouzek**

*Instruments and tools for research in the field of natural sciences*

10:00 – 10:30 *Coffee Break (Foyer)*

14:15 – 15:00 **Invited plenary talks**

Chair: Josef Trögl

14:15 – 15:00 **Tomáš Cajthaml**

*er- and polyfluoroalkyl substances (PFAS) and their occurrence in the Czech environment*

### Conference Hall Residence I.

10:30 – 12:30 **Symposium Chemistry and Environmental Sciences**

Oral presentations

Chair: Jozef Sokol

Time	Name
10:30 - 10:50	<b>Diana Polanská Nebeská</b>
	<b>Phytomanagement of petroleum-polluted soils with industrial crop <i>Miscanthus x giganteus</i></b> <i>Jan Evangelista Purkyně University in Ústí nad Labem, Czech Republic</i>
10:50 - 11:10	<b>Ignác Bugár</b>
	<b>Sensing performance of a D-shaped optical fiber with perspective of water contamination testing</b> <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
11:10 - 11:30	<b>Martina Štrojsová</b>
	<b>Benthic diatoms as bioindicators in constructed wetland</b> <i>Technical University of Liberec, Czech Republic</i>
11:30 - 11:50	<b>Kamil Tokár</b>
	<b>First-principles modelling of organic-inorganic perovskites for photovoltaic applications</b> <i>Slovak University of Technology, Slovakia</i>
11:50 - 12:10	<b>Zita Tokárová</b>
	<b>Dithioamide - an unexpected “chameleon” in the fields of chemistry</b> <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>

13:00 -14:00 Lunch (Diamond Hill Restaurant)

## 15:00 – 16:35 Symposium Chemistry and Environmental Sciences

ePosters

Chair: Jozef Sokol

Time	Name
15:00 – 15:05	<b>Vanda Adamcová</b>
	<b>Advancing cadmium quantification in cellular compartments: a radioanalytical approach</b> Monika Bardáčová, Vanda Adamcová, Peter Nemeček, Mária Pavlovičová, Pavol Hauptvogel, Laura Žideková, Miroslav Horník, Richard Hančinský and Ildikó Matušíková <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
15:05 – 15:10	<b>Vanda Adamcová</b>
	<b>Effect of superabsorbent polymers application on crop growth and uptake of microelements</b> Vanda Adamcová, Martin Valica, Monika Bardáčová, Katarína Ondreičková, Marcela Gubišová, Jozef Gubiš, Vladimír Smutný, Lubomír Neudert, Marian Valentin and Miroslav Horník <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
15:10 – 15:15	<b>Martin Brtnický</b>
	<b>The impact of poly-3-hydroxybutyrate in soil on its biochemical properties after eight-week pre-incubation and eight weeks of plant growth under different soil-sand ratios</b> Martin Brtnický, Jiri Kucerik, Adnan Mustafa, Tereza Hammerschmiedt, Eliska Kamenikova, Ondrej Malicek, Antonin Kintl and Jiri Holatko <i>Brno University of Technology / Mendel University in Brno, Czech Republic</i>
15:15 – 15:20	<b>Vladimír Frišták</b>
	<b>Properties and benefits of sewage sludge-derived biochars</b> Vladimír Frišták, Paulína Jánošková, Martin Pipiška, Gerhard Soja and Christoph Pfeifer <i>University of Trnava, Slovakia</i>
15:20 – 15:25	<b>Renata Gašparová</b>
	<b>Synthesis of tricyclic 5:5:6 heterocycles with three heteroatoms</b> <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
15:25 – 15:30	<b>Jiří Holátko</b>
	<b>Effect of various organic amendments on soil parameters of Central European Cambisol</b> Jiri Holatko, Oldrich Latal, Tereza Hammerschmiedt, Antonin Kintl and Martin Brtnický <i>Agrovýzkum Rapotin /Mendel University in Brno, Czech Republic</i>
15:30 – 15:35	<b>Miroslav Horník</b>
	<b>Accumulation of metals by celery and maize seedlings under hydroponic conditions: the role of transpiration and metal speciation</b> Miroslav Horník, Lenka Vavrinčová, Martin Valica, Vanda Adamcová, Monika Bardáčová, Katarína Ondreičková, Marcela Gubišová and Jozef Gubiš <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
15:35 – 15:40	<b>Yaroslav Bazel</b>
	<b>Vortex-assisted liquid-liquid microextraction based on new fluorophore for the determination of anionic surfactants in water samples</b> Sofia Kakalejčíková and Yaroslav Bazel <i>Pavol Jozef Šafárik University in Košice, Slovakia</i>

Time	Name
15:40 - 15:45	<b>Mária Maliarová</b>
	<b>Avenanthramides as potential pharmaceuticals and their occurrence in different genotypes of <i>Avena</i> spp.</b> Mária Maliarová, Tibor Maliar, Patrik Beňovič, Maria Kopáčová, Peter Hozlar, Andrea Purdešová and Jozef Sokol <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
15:45 - 15:50	<b>Agnieszka Pawłowska</b>
	<b>Influence of surfactants on arsenic bioleaching from mining wastes</b> <i>Wrocław University of Science and Technology</i>
15:50 - 15:55	<b>Andrea Purdešová</b>
	<b>Utilisation of microextraction technique for preconcentration and determination selected xenobiotics in fruit using GC-MS</b> Andrea Purdešová, Mária Maliarová and Jozef Sokol <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
15:55 - 16:00	<b>Jozef Sokol</b>
	<b>Determination of biogenic amines in food by HPLC</b> Jozef Sokol, Maria Maliarová and Andrea Purdešová <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
16:00 - 16:05	<b>Martin Valica</b>
	<b>Effect of soil nutrients on the stability of superabsorbent polymers: hydrogel swelling and potassium release</b> Martin Valica, Vanda Adamcová, Monika Bardáčová, Katarína Ondreičková, Marcela Gubišová, Jozef Gubiš, Marian Valentin and Miroslav Horník <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
16:05 - 16:10	<b>Beata Vranovičová</b>
	<b>Iron complexes with different amino acids</b> <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
16:10 - 16:15	<b>Peter Nemeček</b>
	<b>Enhancement of the HPLC method for polyphenols determination in different plant samples</b> <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
16:15 - 16:20	<b>Ildikó Matušíková</b>
	<b>Diversity of wheat in accumulating essential metal ions for organic farming: a comprehensive study of micronutrient enrichment</b> Laura Žideková, Pavol Hlubina, Peter Nemeček, Mária Pavlovičová, Pavol Hauptvogel, René Hauptvogel, Patrik Mészáros, Alexandra Hlavatá and Ildikó Matušíková <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
16:20 - 16:25	<b>Ivan Maga</b>
	<b>Determination of para-anisidine by method HPLC using azo coupling reaction</b> <i>National Aviation University, Ukraine</i>

17:00 – 18:00 **Symposium Meet the editors**

## Conference Hall **Panorama**

10:00 – 16:00 **Workshop: Save wetlands together**

Chair: Ivan Matušek

Time	Name
10:00 - 10:20	<b>Ivan Matušek</b> Všeobecná prezentácia o projekte SWT
10:20 - 10:40	<b>Ministerstvo životného prostredia</b> Informácia o programe Nórskeho grantov
10:40 - 11:00	<b>Univerzita sv. Cyrila a Metoda v Trnave</b> Výsledky monitorovania kvality vôd a pôd v lokalitách mokradí
11:00 - 11:20	<b>Štátna ochrana prírody</b> Výsledky zoologického a botanického monitoringu mokradí
11:20 - 11:40	<b>Štátna ochrana prírody</b> Projekt revitalizácie mokradí
11:40 - 12:00	<b>Coffee Break</b>
12:00 - 12:20	<b>Pavel Michal</b> Predstavenie práce informačného bodu ZŠ M. Hella
12:20 - 12:40	<b>Ján Tóth</b> Využitie inteligentných informačných technológií na vybudovanie automatizovanej monitorovacej siete v mokradiach
12:40 - 13:00	<b>Michal Paal</b> Využitie dronov pri monitoringu stavu mokradí - výstupy
13:00 - 14:00	<b>Lunch</b>
14:00 - 14:20	<b>Lenka Diener</b> Výsledky výskumu zmien postojov a správania žiakov a študentov k problematike klimatickej zmeny a mokradí
14:20 - 14:40	<b>Elisabeth Iversen</b> Skúsenosti s realizáciou ochrany mokradí v Nórsku a výchova žiakov a študentov v oblasti prírodných vied
14:40 - 16:00	<b>Záver - Okrúhly stôl</b>
16:00 - 16:15	<b>Coffee Break</b>

## Conference Hall **Winter Garden**

15:00 – 18:30 **Symposium Young Scientists**

Oral presentations

Chair: Dominika Vešelényiová

Time	Name
15:00 - 15:15	<b>Romana Mičová</b> <b>Structure, cyclic voltammetry and low-temperature EPR study of hexacoordinate Cu(II) complexes</b> Romana Mičová, Cyril Rajnák, Ján Moncol', Erika Samol'ová, Michal Zalibera and Roman Boča <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>

Time	Name
15:15 - 15:30	<b>Hana Burdová</b>
	<b>Drug sorption on <i>Miscanthus</i> biochar prepared under different conditions</b> Hana Burdová, Veronika Brázová, Zdenka Kwoczynski, Jan Snow, Josef Trögl and Sylvie Kříženecká <i>Jan Evangelista Purkyně University, Czech Republic</i>
15:30 - 15:45	<b>Patrik Beňovič</b>
	<b>A new electrochemical method for the determination of carnosine in nutritional supplements</b> Patrik Beňovič and Andrea Purdešová <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
15:45 - 16:00	<b>Peter Alaxin</b>
	<b>Detection and molecular characterization of viroids infecting grapevine (<i>Vitis vinifera</i> L.) in Slovakia</b> Peter Alaxin, Lukáš Predajňa, Adam Achs, Zdeno Šubr, Michaela Mrkvová and Miroslav Glasa <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
16:00 - 16:15	<b>Coffee Break</b>
16:15 - 16:30	<b>Renáta Kozáčiková</b>
	<b>The DNA markers and periopathogenic bacteria associated with periodontitis</b> Renáta Kozáčiková, Eva Koval'ová, Vladimír Eliáš, Lenka Waschmannová, Gabriela Krasňanská, Gabriela B'andová, Marián Baldovič, Juraj Krajčovič and Michal Konečný <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
16:30 - 16:45	<b>Adam Poláček</b>
	<b>In silico analysis of the alpha-amylase family GH57 to identify new groups of putative proteins with incomplete catalytic machinery</b> Adam Poláček and Štefan Janeček <i>Institute of Molecular Biology, Slovak Academy of Sciences, Bratislava, Slovakia</i>
16:45 - 17:00	<b>Natália Kabaňová</b>
	<b>Analytical detection of substances with potential damage environment by benzimidazole-based fluorescent chemosensor</b> Natália Kabaňová and Zita Tokárová <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
17:00 - 17:15	<b>Alexandra Vozárová</b>
	<b>The occurrence of <i>Vibrio cholerae</i> non-O1/non-O139 in rivers of Slovakia</b> Alexandra Vozárová and Milan Seman <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
17:15 - 17:30	<b>Zuzana Bielková</b>
	<b>Zero-field splitting in tetracoordinate Co(II) complexes containinig heterocyclic aromatic ligands</b> Zuzana Bielková, Cyril Rajnák, Ján Titiš, Ján Moncol', Alena Klokočíková and Roman Boča <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
17:30 - 17:45	<b>Zdenka Kwoczynski</b>
	<b>Characterization of biomass wastes and its possibility of agriculture utilization due to biochar production by pyrolysis</b> Zdenka Kwoczynski and Jiří Čmelík <i>Jan Evangelista Purkyně University, Czech Republic</i>



Time	Name
17:45 - 18:00	<b>Andrej Jedlička</b>
	<b>Unraveling meiotic genes in euglenoid flagellates: shedding light on protist evolutionary patterns</b> Andrej Jedlička, Dominika Vešelényiová and Juraj Krajčovič <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
18:00 - 18:15	<b>Terézia Lalahová</b>
	<b>A reversible temperature induced spin crossover in Fe(III) complex</b> Terézia Lalahová, Ján Titiš, Erika Samoľová, Kevin Tran, Franz Renz, Michal Malina, Roman Boča and Cyril Rajnák <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
18:15 - 19:30	<b>Marcela Gašparová</b>
	<b>Benefits and use of LF NMR spectrometry in academic field and didactics</b> Marcela Gašparová and Zita Tokárová <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>

## Conference Hall **Residence II.**

10:30 - 12:30 **Symposium Biology and Biochemistry**

Oral presentations

Chair: Juraj Krajčovič

Time	Name
10:30 - 10:50	<b>Peter Pristaš</b>
	<b>Halophilic bacteria - the „rising stars“ of next generation industrial biotechnologies</b> Peter Pristaš, Lea Nosáľová, Shivani Adhvaryu, Jana Kisková, Mariana Kolesárová, Lenka Maliničová, Soňa Brestovičová and Mária Piknová <i>Pavol Jozef Šafárik University in Košice, Slovakia</i>
10:50 - 11:10	<b>Lubica Urbániková</b>
	<b>Trehalose synthases fused with a maltokinase - an in silico analysis</b> Lubica Urbániková and Štefan Janeček <i>Institute of Molecular Biology, Slovak Academy of Sciences, Bratislava, Slovakia</i>
11:10 - 11:30	<b>Karim Al Souki</b>
	<b>Phytoremediation potentials of quinoa (<i>Chenopodium quinoa</i> Willd) and impacts on human health once cultivated in potential toxic elements contaminated soils</b> Karim Al Souki, Hana Auer Malinská, Slavomír Adamec and Josef Trögl <i>Jan Evangelista Purkyně University in Ústí nad Labem, Czech Republic</i>
11:30 - 11:50	<b>Šarlota Kaňuková</b>
	<b>Establishment of callus cell-derived plant stem cells in <i>Calendula officinalis</i> L.</b> Šarlota Kaňuková, Marcela Gubišová and Ján Kraic <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
11:50 - 12:10	<b>Richard Hančinský</b>
	<b>Molecular - biological identification and characterization of a new isolate of bean common mosaic virus originated from Slovakia</b> Daniel Mihálik, Richard Hančinský and Jan Kraic <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>

13:00 -14:00 Lunch (Diamond Hill Restaurant)

15:00 - 15:45 **Symposium Biology and Biochemistry**

ePosters

Chair: Štefan Janeček

Time	Name
15:00 - 15:05	<b>Marie Balková</b>
	<b>Residues of pharmaceuticals and industrial substances in substrates based on treated sewage sludge and the substrates use in forestry and arboriculture</b> Erika Fialová, Marie Balková, Aleš Kučera, Vlastimil Skoták, Jana Šušolová and Valerie Vranová Mendel University in Brno, Czech Republic
15:05 - 15:10	<b>Lubica Uváčková</b>
	<b>Detection of xanthomonads on the commercially available seeds of Brassica species</b> Eva Ťrgeová, Lubica Uváčková and Zuzana Gerši University of Ss. Cyril and Methodius in Trnava, Slovakia
15:10 - 15:15	<b>Terézia Beck</b>
	<b>Genetic diversity of the Ganoderma species in Central Europe</b> Terézia Beck, Martin Šebesta, Kateřina Náplavová and Peter Pristaš Matej Bel University, Banská Bystrica, Slovakia
15:15 - 15:20	<b>Eva Ťrgeová</b>
	<b>Essential oils containing caryophyllene and their antibacterial effects</b> Eva Ťrgeová, Lubica Uváčková and Tibor Maliar University of Ss. Cyril and Methodius in Trnava, Slovakia
15:25 - 15:30	<b>Jana Moravčíková</b>
	<b>Overexpression of oak dehydrin gene in tobacco enhances tolerance to copper stress</b> Milan Karas, Eva Boszorádová, Zuzana Gerši and Jana Moravčíková University of Ss. Cyril and Methodius in Trnava, Slovakia
15:30 - 15:35	<b>Filip Mareček</b>
	<b>Two novel closely related subfamilies of the alpha-amylase family GH13</b> Filip Mareček and Štefan Janeček Institute of Molecular Biology, Slovak Academy of Sciences, Bratislava, Slovakia
15:35 - 15:40	<b>Zuzana Gerši</b>
	<b>The expression level of the CysPC domain of mitochondrial calpain in W10BSmL white mutant compared to wild type Euglena gracilis strain Z.</b> Dominika Vešelényiová, Juraj Krajčovič and Zuzana Gerši University of Ss. Cyril and Methodius in Trnava, Slovakia
15:40 - 15:45	<b>Tibor Maliar</b>
	<b>Preparation of the plant extracts with significant enhanced bio-activity, by application of innovative engine, worked on simultaneous application of several physical factors for new food supplements generation</b> Tibor Maliar, Mária Maliarová, Marcela Blažková and Marek Kunštek University of Ss. Cyril and Methodius in Trnava, Slovakia

## Conference Hall **Diamond Hill**

10:30 – 12:00 **Symposium Applied Informatics**

Oral presentations

Chair: Katarína Pribilová, Marián Hostovecký

Time	Name
10:30 - 10:50	<b>Petr Kubera</b>
	<b>Neural networks in natural sciences</b> <i>Czech Technical University in Prague, Jan Evangelista Purkyně University, Czech Republic</i>
10:50 - 11:10	<b>Jiří Pospíchal</b>
	<b>The ethics of artificial intelligence: Issues and challenges</b> Jiří Pospíchal and Iveta Dirgová Luptáková <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
11:10 - 11:30	<b>Ladislav Huraj</b>
	<b>Assessment of DDoS attack simulation tools</b> Ladislav Huraj, Marek Šimon and Matúš Švrčíč <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
11:30 - 11:50	<b>Jana Jurinová</b>
	<b>Development of algorithmic and critical thinking in the context of programming using instructive and engaging explainer animated videos</b> <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
11:50 - 12:10	<b>Martin Kubovčík</b>
	<b>RL-Toolkit: Design and implementation of a set of tools for reinforcement learning in robotics</b> Martin Kubovčík and Jiří Pospíchal <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
12:10 - 12:30	<b>Iveta Dirgová Luptáková</b>
	<b>The principles of data mining and machine learning techniques with R</b> <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
12:30 - 12:50	<b>Iveta Dirgová Luptáková</b>
	<b>Project "The Future is in Applied Artificial Intelligence" (FAAI)</b> <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
12:50 - 13:10	<b>Georgi Dimitrov</b>
	<b>Research and analysis of IT specifications of good practices in the area of artificial intelligence</b> Georgi Dimitrov, Paulina Tsvetkova, Iva Kostadinova, Vasyl Martsenyuk, Dejan Ranci Georgi Dimitrov, Paulina Tsvetkova, Iva Kostadinova, Vasyl Martsenyuk, Dejan Rancic, Iveta Dirgova-Luptakova, Igor Jovancevic, Katia Rasheva – Yordanova, Pepa Petrova and Pavel Petrov <i>University of Library Studies and Information Technologies (ULSIT) Sofia</i>
13:10 - 13:30	<b>Georgi Dimitrov</b>
	<b>Research and Analysis of Different Real Cases, with use AAI</b> Georgi Dimitrov, Iva Kostadinova, Vasyl Martsenyuk, Dejan Rancic, Iveta Dirgova-Luptakova, Igor Jovancevic, Ivan Trenchev, Stefka Toleva-Stoimenova and Pavel Petrov <i>University of Library Studies and Information Technologies (ULSIT) Sofia</i>

Time	Name
13:30 - 13:50	<b>Alžbeta Marček Chorvátová</b>
	<b>ARphymedes and ARphymedes plus projects: modern ways of learning physics with augmented reality</b> Alzbeta Marcek Chorvatova and Gabriela Pavlendova <i>University of Ss Cyril and Methodius in Trnava, Slovakia</i>

13:00 -14:00 Lunch (Diamond Hill Restaurant)

15:00 – 15:45 **Symposium Applied Informatics**  
ePosters  
Chair: Katarína Pribilová, Marián Hostovecký

Time	Name
15:00 - 15:05	<b>Michal Čerňanský</b>
	<b>Echo state network as polynomial approximator</b> <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
15:05 - 15:10	<b>Marek Šimon</b>
	<b>Virtualization in the preparation of experts for advanced solutions of network security</b> Marek Šimon and Ladislav Huraj <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
15:10 - 15:15	<b>Marián Hostovecký</b>
	<b>Possibilities of using heart rate variability data to control serious games</b> <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
15:15 - 15:20	<b>Miroslav Őlvecký</b>
	<b>Comparison of semantic similarity detection algorithms in the evaluation of automated open-ended questions in the Slovak language</b> Miroslav Őlvecký and Miroslav Beňo <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
15:20 - 15:25	<b>Darja Gabriška</b>
	<b>Applying a dynamic control system model to optimize and test time series forecasting using deep learning</b> <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>
15:25 - 15:30	<b>Katarína Pribilová</b>
	<b>Implementation of the algorithms for finding the shortest path using LEGO Mindstorms</b> Katarína Pribilová and Zuzana Mäsiarová <i>University of Ss. Cyril and Methodius in Trnava, Slovakia</i>

19:00 **Social evening (Diamond Hill Restaurant)**

## 20 September 2023 / Conference Day 3

9:00 – 10:00 **Closing Plenary Meeting** – Evaluation, Best Poster Awards, Best Young Scientist Talk Award

10:00 – 11:00 **Free programme** (cable car to Nova Hola)