

CONFERENCE PROGRAMME

6th International Scientific Conference **Biotechnology and Metals**,
October 10-11, 2024, Stará Lesná, High Tatras, Slovakia

THURSDAY, 10 th October, 2024	
8:00 – 9:00	REGISTRATION
9:00 – 9:15	OPENING SESSION
9:15 – 9:45	<p>INTRODUCTION – Profiles of Conference Organizing Institutions</p> <p>Luptáková Alena - Mineral Biotechnology at Institute of Geotechnics of Slovak Academy of Sciences - Research focus and experiences</p> <p>Sedláková-Kaduková Jana - Green innovations: Enhancing efficiency in Environmental Biotechnology</p>
9:45 – 10:45	<p>SESSION 1</p> <p>Chair- persons: Willner Joanna, Ubaldini Stefano</p> <p>INVITED LECTURE</p> <p>Mandl Martin, Kučera Jiří, Vechetová Jitka Substrate limitation in bioleaching cultures of sulfur-oxidizing bacteria</p> <p>LECTURES</p> <p>Khachatryan Anna, Vardanyan Narine, Melkonyan Zaruhi, Zhang Ruiyong, Vardanyan Arevik Development of copper recovery process from calcocite-dominated flotation concentrate</p> <p>Kupka Daniel, Hagarova Lenka, Bartova Zuzana Growth yield of autotrophic Fe-oxidizers on ferrous iron and tetrahedrite</p>
10:45 – 11:15	COFFEE BREAK
11:15 – 12:45	<p>SESSION 2</p> <p>Chair- persons: Matušíková Ildikó, Andráš Peter</p> <p>INVITED LECTURE</p> <p>Janneck Eberhard, Martin Mirko, Stevens Christine, Hedrich Sabrina Development of passive mine water treatment schemes with the application of microbial sulfate reduction in a vertical flow bioreactor</p> <p>LECTURES</p> <p>Čirković Katarina, Ostojić Aleksandar, Radojević Ivana Testing the characteristics of selected microorganisms for possible application in wastewater treatment</p> <p>Sieber Anna, Schönberger Nora, Lederer Franziska, Ribitsch Doris, Guebitz Georg M. Identification of highly specific metal-binding peptides for the selective recovery of metals from waste streams</p> <p>Świerczek Lesław, Cebula Jan, Cenian Adam Application of gas nanobubbles in wastewater treatment and methane digestion: advantages and challenges</p>

	<p>Hlaváčková Veronika Unveiling the Microbial Diversity Profile Shaped by Contaminated Waters at the Historic Silver/Zinc/Lead Mining Site in Kutná Hora</p>
13:00 – 14:00	LUNCH
14:00 – 15:30	<p>SESSION 3 Chair- persons: Saternus Mariola , Urík Martin</p> <p>INVITED LECTURE Saternus Mariola, Lisińska Magdalena Possibility of recovering metals from used electronic equipment</p> <p>LECTURES Vardanyan Arevik, Vardanyan Narine, Khachatryan Anna, Abrahamyan Nelli, Melkonyan Zaruhi Two-Stage Eco-Friendly Approach for Recovery of Copper from Printed Circuit Boards (PCBs)</p> <p>Amiribostanabad Mahdi Recovery of gold and critical elements from e-waste using a biotechnical approach</p> <p>Mádai-Üveges Valéria, Budagodage Lisani Nimira, Bokányi Ljudmilla Application of Hamilton Incyte sensor for the microbial inhibition analysis of <i>Acidithiobacillus ferridurans</i> bacteria</p> <p>Jabłońska-Czapla Magdalena, Yandem George, Willner Joanna Challenges, future outlook and environmental risks associated with the use of photovoltaic technologies as alternative energy sources in the context of smart cities in Poland</p>
15:30 – 16:00	COFFEE BREAK
16:00 – 17:30	POSTER SESSION
From 19:00	SOCIAL EVENING – Hotel Academia

FRIDAY, 11 th October, 2024	
9:00 – 10:30	SESSION 4 Chair- persons: Bálintová Magdaléna, Mandl Martin
	INVITED LECTURE Matušiková Ildikó , Pavlovičová Mária, Hančinský Richard, Hauptvogel Pavol, Hauptvogel René Plant responses under growth in presence of toxic metals and their relevance for environmental biotechnologies LECTURES Frueholz Rebeka , Wasner Michael, Spiess Sabine, Haberbauer Marianne PHOS4PLANT: Recycling of Sewage Sludge Ash into Phosphate-rich Plant Fertilizer Hančinský Richard , Žideková Laura, Šutáková Monika, Hauptvogel Pavol, Gerši Zuzana, Matušiková Ildikó Response of pathogenesis related proteins to combined stress in wheat Čížková Mária , Vítová Milada, Řeháková Klára, Čapková Kateřina, Rucki Marian Macroalgae from post-mining lakes can accumulate rare earth elements Sincak Miroslava , Nosek Jozef, Luptakova Alena, Jandacka Petr, Luptak Miloslav, Sedlakova-Kadukova Jana Investigating Mitochondrial Contributions to Magnetoreception in <i>Saccharomyces cerevisiae</i> and Their Potential Biotechnological Applications Under Varied Magnetic Fields
10:30 – 11:00	COFFEE BREAK
11:00 – 12:00	SESSION 5 Chair- persons: Demková Lenka, Martin Mirko
	LECTURES Nguyen Nhung H.A. , Povedano-Priego Cristina, Velianyuk Vira, Palusak Martin, Hlavackova Veronika, Cernik Miroslav, Cundy Andrew, Petrangeli Papini Marco, L.Merroun Mohamed, Sevcu Alena Can fungi unlock hidden potential and recover heavy metals at former Czech mining sites? Goneková Zuzana, Urík Martin , Kósaová Rebeka, Farkas Bence, Miglierini Marcel B. Evaluation of ferric minerals's stability in the presence of filamentous fungi - challenging the expectations Hagarová Lenka , Kupka Daniel, Bártová Zuzana Morphological and elemental evaluation of tetrahedrite grains before and after bioleaching Cebula Jan , Wiewiórska Iwona, Świerczek Lesław, Cenian Adam Dissolving selected sediments collected on the sand filter under the influence of disinfectants
12:00 – 12:30	CLOSING CEREMONY
12:30 – 14:00	LUNCH

LIST OF POSTERS:

- P1** **Andráš Peter**, Midula Pavol, Ševčíková Jana, Šuránek Matej, Matos Joao, Janštová Jana, Buccheri Giuseppe, Tomaškin Ján, Drímal Marek
Bioavailability of potentially toxic elements in selected Cu deposits of Europe
- P2** **Bálintová Magdaléna**, Junáková Natália, Chernysh Yelizaveta
Heavy metals and sulfate removal from model solutions using ion exchange resins
- P3** **Bártová Zuzana**
Novel use of old mining sites
- P4** **Bártová Zuzana**, Kupka Daniel, Hagarová Lenka, Ivaničová Lucia, Václavíková Miroslava
Bioleaching of tetrahedrite- bacterial oxidation and growth yield behaviour
- P5** **Bobuřská Lenka**, Demková Lenka, Árvay Július
Spatial variability of soil biochemical properties in the former mining area
- P6** **Čičáková Claudia**, Kupka Daniel, Hroncová Jana, Hagarová Lenka, Faragó Tomáš, Mačingová Eva, Krajanová Viktória, Jurkovič Ľubomír, Václavíková Miroslava
Aluminum electrocoagulation for efficient treatment of landfill leachate contaminated with high concentration of fluorides and cyanides
- P7** **Demková Lenka**, Bobuřská Lenka, Árvay Július
Evaluation of biochemical properties and potentially toxic elements in the sediment of the subterranean system of the Brestovská Cave
- P8** **Farkas Bence**, Urík Martin
Evaluation of manganese bioextraction potential of microscopic filamentous fungus
- P9** **Hlubina Pavol**, Hančinský Richard, Mihálik Daniel, Hauptvogel Pavol, Hauptvogel René, Matušíková Ildikó
Potential of mycorrhizal fungi in the extraction of metals from soil
- P10** **Horváthová Hana**, Jurkovič Ľubomír, Faragó Tomáš, Marníková Michaela
Bioleaching of potentially toxic elements from contaminated geomaterials of former mining site Medzibrod
- P11** **Janáková Iva**, Čablík Vladimír, Škvarka Josef, Janštová Sarah
Bioleaching of platinum from tailings in the Krušné hory mountains
- P12** **Kabaňová Natália**, Tokárová Zita
Proposal of the lithium-thionyl chloride waste detection from unconsumed LIBs
- P13** **Kępys Waldemar**, Śliwka Małgorzata, Pawul Małgorzata
Nature-based recovery of metal-poor post-production wastes
- P14** **Khachatryan Anna**, Vardanyan Narine, Melkonyan Zaruhi, Zhang Ruiyong, Vardanyan Arevik
Indigenous Association Perspective for Copper Bioleaching

- P15 Kinder Alexandra**, Hlubina Pavol, Hauptvogel René, Hauptvogel Pavol, Matušíková Ildikó
Influence of factors on zinc intake in selected varieties of *Triticum durum* for improving nutrition in populations
- P16 Luptáková Alena**, Bálintová Magdaléna, Šestinová Oľga, Guglietta Daniela, Ubaldini Stefano, Lupták Miloslav
Bioleaching of mine wastes from the abandoned mining deposits in Slovakia
- P17 Mačingová Eva**, Kupka Daniel, Luptáková Alena, Jáger Dávid
Bioleaching of tetrahedrite from the Strieborná vein of the Rožňava ore field
- P18 Pawul Małgorzata**, Kępys Waldemar, Śliwka Małgorzata
Biological methods of metal recovery from mineral waste and metal-poor ores
- P19 Śliwka Małgorzata**, Pawul Małgorzata, Kępys Waldemar
Recovery of metals from mineral waste using phytoremediation supported by coherent light stimulation
- P20 Šestinová Oľga**, Findoráková Lenka, Hančulák Jozef
Industrial emission impact on metal accumulation in park-soils using ekotoxicity tests associated with the soil organic matter assessment
- P21 Špirová Veronika**, Faragó Tomáš, Hlaváč Peter, Vítková Martina, Zarzsevszkij Szimona, Jurkovič Ľubomír
Geochemical fractionation of arsenic and antimony in co-contaminated soils in a former mining area in Pezinok, Slovakia
- P22 Tlčíková Marcela**, Horváthová Hana, Víchová Viktorie, Jurkovič Ľubomír
Iron bionanoparticles (Fe-BNPs) derived from grape pomace
- P23 Velianyková Vira**, Hlavackova Veronika, Ševců Alena
Metal-based nanoparticles immobilization using *Pseudomonadota* from Zlate Hory former mining site in Czech Republic
- P24 Willner Joanna**, Fornalczyk Agnieszka, Zawisz Rafał
Preliminary study on copper adsorption from aqueous solutions using waste cordierite