

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	INTRODUCTION – Profiles of Conference Organizing Institutions Luptáková Alena - Mineral Biotechnology at Institute of Geotechnics of Slovak Academy of Sciences - Research Focus and Experiences Sedláková-Kaduková Jana - Green Innovations: Enhancing efficiency in Environmental Biotechnology
9:45 – 10:45	SESSION 1 Chair- persons: Willner Joanna, Ubaldini Stefano INVITED LECTURE Mandl Martin , Kučera Jiří, Vechetová Jitka Substrate limitation in bioleaching cultures of sulphur-oxidizing bacteria LECTURES Khachatryan Anna, Vardanyan Narine , Melkonyan Zaruhi, Zhang Ruiyong, Vardanyan Arevik Development of copper recovery process from calcocite-dominated flotation concentrate Kupka Daniel , Hagarova Lenka, Bartova Zuzana Growth yield of autotrophic Fe-oxidizers on ferrous iron and tetrahedrite
10:45 – 11:15	COFFEE BREAK
11:15 – 12:45	SESSION 2 Chair- persons: Matušíková Ildikó, Andráš Peter INVITED LECTURE Janneck Eberhard , Martin Mirko, Stevens Christine, Hedrich Sabrina Development of passive mine water treatment schemes with the application of microbial sulphate reduction in a vertical flow bioreactor LECTURES Ćirković Katarina , Ostojić Aleksandar, Radojević Ivana Testing the characteristics of selected microorganisms for possible application in wastewater treatment 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 Świerczek Lesław , Cebula Jan, Cenian Adam Application of gas nanobubbles in wastewater treatment and methane digestion: advantages and challenges

	<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: Willner Joanna, 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, 11th October, 2024

9:00 – 10:30	SESSION 4 Chair- persons: Bálintová Magdaléna, Mandl Martin
	INVITED LECTURE Matušíková 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, Matušíková Ildikó Response of pathogenesis related proteins to combined stress in wheat
	Čížková Mária 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, Velianyk 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, Ivaničová Lucia, Jáger Dávid 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:

Andráš Peter, Midula Pavol, Ševčíková Janka, Janštová Jana, Tomaškin Ján
Bioavailability of potentially toxic elements in selected Cu deposits of Europe

Bálintová Magdaléna, Junáková Natália, Chernysh Yelizaveta
Heavy metals and sulphate removal from model solutions using ion exchange resins

Bartova Zuzana, Kupka Daniel, Hagarova Lenka, Ivaničová Lucia, Václavíková Miroslava
Bioleaching of Tetrahedrite- Bacterial Oxidation and Growth Yield Behaviour

Bobuřská Lenka, Demková Lenka, Árvay Július
Spatial variability of soil biochemical properties in the former mining area

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

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

Farkas Bence, Urík Martin
Evaluation of manganese bioextraction potential of microscopic filamentous fungus

Hlubina Pavol, Hančinský Richard, Mihálik Daniel, Hauptvogel Pavol, Hauptvogel René, Matušíková Ildikó
Potential of mycorrhizal fungi in the extraction of metals from soil

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

Horváthová Hana, Jurkovič Ľubomír, Faragó Tomáš, Marníková Michaela
Bioleaching of potentially toxic elements from contaminated geomaterials of former mining site Medzibrod

Janáková Iva, Čablík Vladimír, Škvarka Josef, Janštová Sarah
Bioleaching of platinum from tailings in the Krušné hory mountains

Kabaňová Natália, Tokárová Zita

Proposal of the lithium-thionyl chloride waste detection from unconsumed LIBs

Kępys Waldemar

Nature-based recovery of metal-poor post-production wastes

Khachatryan Anna, Vardanyan Narine, Melkonyan Zaruhi, Zhang Ruiyong, Vardanyan Arevik
Indigenous Association Perspective for Copper Bioleaching

Luptáková Alena, Bálintová Magdaléna, Guglietta Daniela, Šestinová Oľga, Ubaldini Stefano,
Lupták Miloslav

Bioleaching of mine wastes from the abandoned mining deposits in Slovakia

Mačingová Eva, Kupka Daniel, Luptáková Alena

Bioleaching of tetrahedrite from the Strieborná vein of the Rožňava ore field

Manko Peter, Demková Lenka, Luptáková Alena

Ecological Consequences of Mining: Effects of Acid Mine Drainage on the Mayfly and Stonefly fauna of a Smolnik Stream in Slovakia

Pawul Małgorzata, Kępys Waldemar, Śliwka Małgorzata

Biological methods of metal recovery from mineral waste and metal-poor ores

Śliwka Małgorzata

Recovery of metals from mineral waste using phytoremediation supported by coherent light stimulation

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

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

Tlčíková Marcela, Horváthová Hana, Víchovej Viktorie, Jurkovič Ľubomír

Iron bionanoparticles (Fe-BNPs) derived from grape pomace

Velianyk Vira, Hlavackova Veronika, Ševců Alena

Metal-based nanoparticles immobilization using *Pseudomonadota* from Zlate Hory former mining site in Czech Republic

Willner Joanna, Fornalczyk Agnieszka, Zawisz Rafał

Preliminary study on copper adsorption from aqueous solutions using waste cordierite