

CONFERENCE PROGRAM

Conference date: **19 June 2023**

Conference location: **Emerald Hall, 2nd floor, Bluesky Hotel, Ulaanbaatar, Mongolia**

Time	Activity / Presentation	Speaker / Chair
08:30 – 09:00	Registration	
09:00 – 09:20	Opening	Prof. Battsengel Baatar (Chair of the Conference, Rector of GMIT) Mr. Batbayar G. (State Secretary of the Ministry of Mining and Heavy Industry) H.E. Joern Rosenberg (Ambassador of the Federal Republic of Germany)
09:20 – 09:40	Policy reforms in the mineral sector of Mongolia	Dr. Uyanga Bold (Ministry of Mining and Heavy Industry)
09:40 – 10:00	German-Mongolian technical cooperation for sustainable mineral resources management in the last decades	Dr. T. Abel (Federal Institute for Geosciences and Natural Resources, Germany)
10:00 – 10:20	Coffee break	
	Session 1: Sustainable Use of Natural Resources	Chairs: Battsengel Baatar (GMIT) Melissa Shanjengange (Oyu Tolgoi)
10:20 – 10:35	Innovation opportunities through the circular economy in mining – proactive handling of ESG factors and sustainability-oriented regulation	Stefanie Krause, Jürgen Kretschmann
10:35 – 10:50	Remediation of mine waters and mine water runoff by use of natural and modified natural materials	John Barbour, Cathleen Webb, David Dixon
10:50 – 11:05	Five years of raw material exploration with the ultra-light airborne system D-MTUC in Mongolia – a review	Rainer Herd
11:05 – 11:20	Investigation of rare earth elements from coal and coal byproducts	Bayardulam Jamiyansuren , Azjargal Burneebaatar, Battsengel Baatar, Bold Khosbayar
11:20 – 11:35	Global trends in mining – correlation between mining methods and technology development for future mines	Sandra Nowosad , Oliver Langefeld
11:35 – 11:50	Applications of immersive technology in the mining industry	Enkhbayar Altantsetseg
11:50 – 12:05	The potential of microorganisms to leach rare earth elements from monazite	B. Bayarbayasgalan , D.Nomin-Erdene, A.Altangerel, D.Sarangerel
12:05 – 12:30	Q&A session	
12:30 – 13:30	Lunch	
	Session 2: Improvement of the Legal Framework for Environmental Protection in Mongolia, China and Germany	Chairs: Zaya Lkhagva (GIZ Mongolia) Marco Haase (GIZ China)
13:30-13:35	Opening remarks	Marco Haase , (Program Director Sino-German Legal Cooperation Program, GIZ China)
13:35 – 13:50	The state and ambience of mining legislation in modern Mongolia - near future" (problems and ways to overcome)	Khulan Bayar
13:50 – 14:05	Addressing the environmental impacts of mineral resource extraction	Carsten Drebenstedt
14:05 – 14:20	The legal framework for environmental protection in China's mining industry	Wang Canfa
14:20 – 14:35	Mining and environmental law in Germany	Walter Frenz
14:35 – 14:50	Challenges and prospects of the comprehensive resource utilization system in China	Zhang Jianwei
14:50 – 15:05	Implementation and practice of environmental legislation in the minerals sector of Mongolia: current situation and ways to overcome the issues	Surakhbayar Galsan
15:05 – 15:35	Q&A session	
15:35 – 15:50	Coffee break	

Time	Activity / Presentation	Speaker / Chair
Session 3a:		
Environmental and Economic Challenges in Raw Material Extraction and Processing		Chairs: Gantuya Ganbat (GMIT) Rainer Herd (BTU)
15:50 – 16:05	Environmental issues of coal mining in Mongolia	Martin Knippertz , Enkhjargal Sodnomdarjaa
16:05 – 16:20	Aviation weather hazard meteorological conditions' role in air pollution at Buyant-Ukhaa aerodrome in Mongolia	N. Enkhdalai , E. Munkhtsetseg, B. Tsatsral
16:20 – 16:35	The social license to operate in mining: conceptual evolution and practical implementation in Mongolia	Enkhzaya Chuluunbaatar , Sugar Gonchigjantsan, Catherine Macdonald
16:35 – 16:50	Case studies of thermal treatments used for multi/oil-contaminated soil in Korea	Taehoon Koh, Donggeun Lee, Changju Kim, and Sungchil Lee
16:50 – 17:05	An overview of water management practices in Namibian mines	Harmony K. Musiyarira , Benjamin Mapani, Mallikarjun Pillalamarry
17:05 – 17:20	Reduction of road dust using filters mounted on public buses	Odbileg Norovrinchin , Sungchil Lee, Baljinnyam Guntevsuren
17:20 – 17:35	Measurements and 3-dimensional simulations of carbon-monoxide distribution in Mongolian ger	Byambakhorol Battetseg , Gantuya Ganbat, Battulga Nasanjargal
17:35 – 17:50	A dust emission model elaborated by dust parameters as soil moisture functions in Mongolia	Munkhtsetseg, E. , Shinoda, M., Gillies, J.A., Kimura, R., Nikolich, G., Mikami, M. and Ishizuka, M.
17:50 – 18:00	Q&A session	
19:00	Welcome reception	

Conference date: **20 June, 2023**

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Time	Activity / Presentation	Speaker / Chair
Session 3b:		
Environmental and Economic Challenges in Raw Material Extraction and Processing + Energy Efficiency		Chairs: Sungchil Lee (GMIT) Lkhagvaragchaa T. (MCS)
09:00 – 09:15	Sustainability for All? The challenges of predicting and managing the potential risks of end-of-life electric vehicles and their batteries in the Global South	Luisa Prates , Daniel Karthe, Lulu Zhang, Lili Wang, Jack O'Connor, Halim Lee, Christina Dornack
09:15 – 09:30	Sustainable mining and climate protection: exchange between Mongolia and Germany	Walter Frenz
09:30 – 09:45	Peak flow frequency analysis for the Orkhon River	Battsengel Dashdorj
09:45 – 10:00	Management of end-of-life electric vehicles and lithium-ion batteries in Mongolia	Uelun Munkhjargal , Luisa Prates, Daniel Karthe, Gantuya Ganbat
10:00 – 10:15	A comprehensive study on harmonic analysis and behavior in power grids with induction melting furnaces	Ariunbolor Purvee , Ankhbayar Vandandorj
10:15 – 10:30	Study of residential house's energy demand	Enkh-Uchral Erdenebaatar , Amarbayar Adiyabat
10:30 – 10:45	Capacity building in Mongolian higher education for energy-efficient buildings (CEBEC): A collaborative endeavor	Myagmarjav Bold , Ariunbolor Purvee, Altangerel Lkhamsuren, Dorjsundui Gombokhurts, Nyamdulam Renten, Bold Enkhbold
10:45 – 11:00	Passive Solar Greenhouse with soil heat storage	Tamir Otgonsuren , Amarbayar Adiyabat
11:00 – 11:15	Q&A session	
11:15 – 11:30	Coffee break	

Time	Activity / Presentation	Speaker / Chair
Session 4a: Resource-Oriented Engineering Development		Chairs: Carsten Drebenstedt (TUBAF) Orgodol Togoo (Boroo Gold)
11:30– 11:45	Laser-based wear protection coatings for machine parts in the mineral-processing industry – an overview	Gunther C. Stehr , Ariunbolor Purvee, Battsengel Baatar, Khosbayer Nyamjav
11:45 – 12:00	Adsorption equilibria and kinetics of cephalosporin onto surfactant-modified Mongolian zeolite	Altantogos Myagmar , Kader Poturcu, Ochirkhuyag Bayanjargal, Ata Akcil, Sarangerel Davaasambuu
12:00 – 12:15	Optimization and continuous improvement of the Oyu Tolgoi comminution circuit	Ganbold Malkhuuz , Adrian Zarantonello
12:15 – 12:30	Microbial reduction of nitrous oxide: ecophysiological investigations to development of a viable greenhouse-gas removal biotechnology	Sukhwan Yoon
12:30 – 12:45	Q&A session	
12:45 – 13:30	Lunch	
Session 4b: Resource-Oriented Engineering Development		Chairs: Manfred Hampe (TU Darmstadt) Martin Knippertz (RWTH Aachen)
13:30 – 13:45	Ore Characterization and Mineralization Effect and Difficulties on Gold Cyanide Leaching	J. Delgertsetseg , Ts. Amartuvshin, D. Khatanbaatar
13:45 – 14:00	Selective electrochemical extraction of copper from electronic waste leaching solution with ferric sulphate	B.Maral , Z.Tuguldur, B.Sukhbaatar, D.Sarangerel
14:00 – 14:15	The use of numerical calculation methods in geotechnics and mining	Erdenetuya Gantulga, Lothar te Kamp , Thomas Hollenberg
14:15 – 14:30	Crud prevention in the solvent extraction stage of a copper production plant	Munkhzaya Batjargal, Bayardulam Jamiyansuren, Temuujiin Tuvshindelger , Ochirbat Purevjav, Altangerel Lkhamsuren, Manfred Hampe, Battsengel Baatar
14:30 – 14:45	Blast-induced ground vibration impact assessment on the sensitive receptors	Bataa Dandarmaa , Baasanbat Tsagaan, Bilegt Batbold, Batzorig Otgonjargal, Uuganbayar Buyantogtokh, Tseesuren Oyun-Erdene, Erdenebayar Naran
14:45 – 15:00	Production of light hydrocarbons (C2-C4) by hydrogenation of CO ₂ using Co-K/γ-Al ₂ O ₃ catalysts with additional metal promoters (Ba, La, Ce) and combined supports (Y ₂ O ₃ , TiO ₂)	Manlaibaatar Purevsuren , Enkhsaruul Byambajav
15:00 – 15:15	Kinetic modeling of acid leaching of rare earth elements from the Lugiin Gol deposit	D.Purevjargal , A.Altangerel, B.Sukhbaatar, D.Sarangerel
15:15 – 15:30	A study of mechanical properties of wear-resistant chromite alloy coated low carbon steel by semi-automatic welding method	G.Oyunsuren, B.Purevdorj
15:30 – 15:45	Electrochemical performance of natural molybdenite (MoS ₂) as an anode material in lithium-ion battery	Bolormaa Gendensuren , Nyambayar Sugartseren, Min-Jae Kim, Battsengel Baatar Eun-Suok Oh
15:45 – 16:00	Q&A session	
16:00 – 16:15	Coffee break	
16:00 – 17:00	Mobile OT – Oyu Tolgoi copper mining project information distribution session /at the Bluesky Hotel parking lot/	
16:00 – 17:00	Poster Session	
	Presentation	Speakers
	Metal organic framework electrocatalysts for water splitting	Ravi Nivetha , Tran Van Phuc, Huynh Ngoc Diem, Seung Hyun Hur
	<i>Neurospora crassa</i> glutamate decarboxylase cell surface display toward the the extracellular Gamma-aminobutyric acid production in recombinant <i>Escherichia coli</i>	Jae Hoon Jeong , Ashokkumar Kumaravel, Soon Ho Hong

Computational prediction of dehydrogenation catalysts for perhydro-dibenzyl toluene	Jingwen Zhou , Sung Gu Kang
Facile synthesis of two-dimensional Cu ₃ Mo ₂ O ₉ /sulfur-doped graphene quantum dots nanocomposites for electrochemical water splitting	Min Jae Kim , Tran Van Tam, Won Mook Choi
Influence of metal-support interactions on catalytic performance over highly dispersed xNi/yCZA catalysts for ethanol steam reforming	Mingyan Wang , Azam Jamsaz, Pham Ngoc Nhiem, Hoang Thi Van Anh, Eun Woo Shin
Synthesis of spherical suprastructure NiCu(OH) ₂ for efficient ammonia electrooxidation: mechanistic investigation	Hoang-Khoi Vu , Thanh Truong Dang, Pragyan, Jin Suk Chung
Presentation	Speakers
Modification and polymerization towards water-based poly-acrylate binder on the performance of electrochemical double-layer capacitors	Sugartseren Nyambayar , Gendersuren Bolormaa, Kim Min Jae, Eun-Suok Oh
According to SiO _x content on the electrochemical behavior of SiO _x /C composite anodes of Lithium-ion battery	Min-Jae Kim , Ye-ji Yun, Yu-ri Seo, Se-hwa Cheon, Eun-Suok Oh
Internalization of External Costs in the Mining Sector	Malte Giesenow
Optimization of CDF: Copper leaching model and sensitivity analysis	G.Dorjsundui , B.Sukhbaatar, L.Altangerel
Reprocessing of tailing from Erdenet copper ores: Optimization of the flotation	Narangarav T. Battsengel B. Ankhchimeg G. Dugar D.
Soil properties of the permafrost zone in Mongolia and differences between regions	Purevdorj Ts.
Testing, Sizing and Optimization of Plant Thickener	Ts. Amartuvshin , B. Batsaikhan, S. Handmaa
Natural Rehabilitation Potential in Two Distinct Mining Areas in Mongolia	Oyun-erdene Tsogtsaikhan , Gantuya Ganbat, Martin Knippertz
17:00	Closing

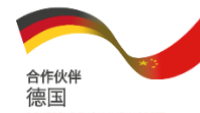
Field trip date: **21 June, 2023**
Field trip itinerary: **Ulaanbaatar -> Baganuur -> GMITcampus in Nalaikh -> Ulaanbaatar**

Time	Activity
8:00	Shuttle bus start from Bluesky Hotel
10:00	Arrive at Baganuur LC
10:05	Greet guests and provide safety instructions in Room No. 209
10:30	Coffee break
10:50	Introduction of Baganuur LC and discussion
11:30	Field trip at the mining site
13:30	Lunch
14:30	Field trip at the department of maintenance and technological machines repair
15:30	Start from Baganuur to Nalaikh
16:00	Arrive at GMIT campus in Nalaikh
16:05	Introduction of GMIT and campus tour
17:00	Head to UB

Partners:



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