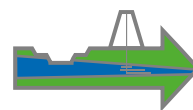


Conference Program *

First International Conference **Mines of the Future**

Tuesday 22 May

PPS Auditorium, Prof.-Pirlet-Straße 12



	Start
Registration at PPS Auditorium Familiarisation with presentation equipment Poster setup	16:00
Welcome Drinks	18:00

Wednesday 23 May

PPS Auditorium, Prof.-Pirlet-Straße 12

	Start
Registration & Welcome Coffee	08:00

Welcome (PPS H1) Bernd Lottermoser, Conference Chair	08:30	
Keynotes	Kathryn Moore (University of Exeter, UK) The emerging niche for ethical small-scale mining	09:00
	Dominic Roberts (Mineco Ltd., UK) The future of European mining	09:30
	Jürgen Brune (Colorado School of Mines, USA) The 4th Industrial Revolution in the mining industry	10:00

Morning Tea (Foyer)	10:30
Exhibition & Poster Session	- 11:00

* Subject to be changed

Wednesday 23 May

PPS Auditorium, Prof.-Pirlet-Straße 12

<p>Session 1 (PPS H1)</p> <p>EU Horizon 2020 IMP@CT Project</p> <p>Chair: Tobias Braun (RWTH Aachen University, Germany)</p>	<p>Session 2 (PPS H2)</p> <p>Technological Advances and Innovation</p> <p>Chair: Safak Gokhan Ozkan (Istanbul University, Turkey)</p>	<p>11:00</p>
<p>Guillaume Bertrand (BRGM, France) <i>IMP@CT baseline database for 'switch on-switch off' extraction</i></p> <p>Olga Sidorenko (University of Eastern Finland, Finland) <i>Reconsidering small-scale mining and its community relations in Europe: developing research frame for case studies in Bosnia and Herzegovina</i></p> <p>Luke Palmer (University of Exeter, UK) <i>Definition of mineral resources during exploration and exploitation in a Switch-On-Switch-Off mining context</i></p> <p>Lars Barnewold (RWTH Aachen University, Germany) <i>Development of a mine plan for a flexible switch-on switch-off mining system in steeply dipping deposits</i></p> <p>Jérôme Bodin (Bureau de Recherches Géologiques et Minières, France) <i>Linking mineral processing simulation with life cycle assessment to evaluate the potential environmental impacts in the framework of small-scale mining technologies development</i></p>	<p>Manuel Hernandez (Threedify Incorporate, Canada) <i>Where and when is it optimal to switch from an open pit to an underground operation? "Optunimizer" provides you with the right answer</i></p> <p>Mustafa Kumral (McGill University, Canada) <i>Optimal process design facilitation for mining operations</i></p> <p>Aldin Ardian (McGill University, Canada) <i>Stochastic treatment of correlation in the mineral industries</i></p> <p>Rüdiger Heinrich (Haver & Boecker, Germany) <i>Optimization of mineral processing plants with simulation software „NIA-flow“</i></p> <p>Colin Farrelly (Indago Partners, Australia) <i>Open innovation in mining</i></p> <p>Mustafa Kahraman (Gumushane University, Turkey) <i>Use of equipment and system data beyond OEM reports in mine management</i></p>	
<p>Lunch (Foyer)</p> <p>Exhibition & Poster Session</p>		<p>12:30</p> <p>-</p> <p>13:45</p>

Wednesday 23 May

PPS Auditorium, Prof.-Pirlet-Straße 12

<p>Session 1 (PPS H1)</p> <p>Responsible and Sustainable Mining</p> <p>Chair: Bernhard Dold (Luleå University of Technology, Sweden)</p>	<p>Session 2 (PPS H2)</p> <p>Technological Advances and Innovation</p> <p>Chair: Carlos Petter (Camborne School of Mines, UK)</p>	<p>13:45</p>
<p><i>Horst Hejny (MinPol GmbH, Austria)</i> <i>BIOMore – In-situ bioleaching to extract industry metals from deep buried deposits</i></p> <p>Lotfollah Karimzadeh (Helmholtz-Zentrum, Germany) <i>Benchmark 3D reactive transport modelling of leaching of fractured calcareous sulfide ores</i></p> <p>Horst Hejny (MinPol GmbH, Austria) <i>Technological innovations to process low-grade, complex and polymetallic ores – INTMET</i></p> <p>André Niemann (Universität Duisburg Essen, Germany) <i>Underground pumped hydroelectric storage using existing coal mining infrastructure</i></p> <p>Margarete Kalin (Boojum Research Ltd., Canada) <i>Acid Rock Drainage or not - oxidative vs. reductive biofilms - a microbial question</i></p>	<p>Martin Vaeßen (Epiroc Deutschland GmbH, Germany) <i>Epiroc Exploration Manager - A new tool that turns the unknown into fact</i></p> <p>Manfred Hahn (Becker Mining Systems AG, Germany) <i>Work safety within the framework of Mining 4.0</i></p> <p>Eduardo Cota (Federal University of Ouro Preto, Brazil) <i>Espeleorobo: A novel method for caves and confined environment inspection</i></p> <p>Eduardo Cota (Federal University of Ouro Preto, Brazil) <i>Current trends in Vale's mining robotics operations</i></p> <p>Franziska Günther (TU Bergakademie, Germany) <i>Investigating synergies between autonomous robots and Internet of Things in underground mining</i></p> <p>Fabian Uth (RWTH Aachen University, Germany) <i>Development of an IMU/UWB sensorfusion for underground positioning of mobile equipment</i></p>	
<p>Afternoon Tea (Foyer)</p> <p>Exhibition & Poster Session</p>		<p>15:15 - 16:00</p>

Wednesday 23 May

PPS Auditorium, Prof.-Pirlet-Straße 12

<p>Session 1 (PPS H1)</p> <p>Responsible and Sustainable Mining</p> <p>Chair: Rauno Sairinen (University of Eastern Finland, Finland)</p>	<p>Session 2 (PPS H2)</p> <p>Technological Advances and Innovation</p> <p>Chair: Jürgen Brune (Colorado School of Mines, USA)</p>	<p>16:00</p>
<p><i>Jan Johansson (University of Technology, Sweden)</i> <i>Attractive workplaces in future underground mining</i></p> <p><i>Tuija Mononen (University of Eastern Finland, Finland)</i> <i>Risk perception, mining industry and local people</i></p> <p><i>Mariana Galvão Lyra (University of Eastern Finland, Finland)</i> <i>Can an environmental disaster spread positive consequences?</i></p> <p><i>Melissa Roxana Quispe-Zuniga (Zentrum für Entwicklungsforschung, Germany)</i> <i>Impact of heavy metals and community's livelihood on negotiations between mining companies and campesino communities</i></p> <p><i>Carlos Petter (UFRGS-Laprom, Brazil)</i> <i>Ensuring the long-term supply of strategic minerals: the case of niobium in Brazil</i></p> <p><i>Jeison Delgado-Jiménez (National University of Colombia, Colombia)</i> <i>Analysis of the contributions of mining developments to the sustainability in the regional scale</i></p>	<p><i>Yuksel Asli Sari (McGill University, Canada)</i> <i>A new dimension reduction and optimization approach to stope layout planning</i></p> <p><i>Peter Botka (Voith Turbo, Germany)</i> <i>Intelligent mining meets proven reliability</i></p> <p><i>Marcos Paulo Torre (Federal University of Ouro Preto, Brazil)</i> <i>A novel robotic device for inspection of belt conveyor idler rolls</i></p> <p><i>Regivaldo Carvalho (Federal University of Ouro Preto, Brazil)</i> <i>An UAV-based Framework for Automated Thermographic Inspection of Belt Conveyors in the Mining Industry</i></p> <p><i>Behzad Ghodrati (Lulea University of Technology, Sweden)</i> <i>A roadmap for lean maintenance of mining machinery</i></p> <p><i>Balaraju Jakkula (National Institute of Technology India)</i> <i>Measurement of reliability based preventive maintenance time intervals for LHD machines</i></p>	<p>17:30</p>
<p>Entrance & Networking Drinks</p>		<p>19:00</p>
<p>Dinner Party</p>		<p>20:00</p>

Thursday 24 May

PPS Auditorium, Prof.-Pirlet-Straße 12

	Start	
Registration & Welcome Coffee	08:45	
Session 1 (PPS H1) Responsible and Sustainable Mining Chair: Tony Hand (EIT RawMaterials GmbH, Germany) Bernhard Dold (Luleå University of Technology, Sweden) <i>Mine waste: The georesource of the future</i> Lena Alakangas (Luleå University of Technology, Sweden) <i>Re-mining as an alternative solution to common remediation techniques</i> Eugen Martach (Fugro Germany Land GmbH, Germany) <i>Next generation of tailings exploration technologies: XRF-CPT probe as real-time high resolution tool for low invasive tailings characterization</i> Henk Van Muijen (IHC Mining BV, Netherlands) <i>Tailings rehandling and re-processing using dredge technology and slurry transportation</i>	Session 2 (PPS H2) Technological Advances and Innovation Chair: Behzad Ghodrati (Luleå University of Technology, Sweden) Violeta Velasco (Tre Altamira Slu, Spain) <i>Satellite technology for monitoring modern mining operations</i> Angus Morrison (Imperial College London, UK) <i>Refining mineral processing equipment design and operation using positron emission particle tracking (PEPT)</i> Eduardo Cota (Federal University of Ouro Preto, Brazil) <i>Overview of the magnetite content analyzers in iron ore pellets</i> Marcos Paulo Torre (Federal University of Ouro Preto, Brazil) <i>Method for dynamically adjusting the parameters of an iron ore mill in a chemical analysis laboratory</i>	09:00
Morning Tea (Foyer)	10:00	
Exhibition & Poster Session	-	
	10:30	

Thursday 24 May

PPS Auditorium, Prof.-Pirlet-Straße 12

<p>Session 1 (PPS H1)</p> <p>Responsible and Sustainable Mining</p> <p>Chair: Lena Alakangas (Luleå University of Technology, Sweden)</p>	<p>Session 2 (PPS H2)</p> <p>Best Practices and Benchmarking</p> <p>Chair: Klaus Stöckmann (VDMA Mining, Germany)</p>	<p>10:30</p>
<p>Elena Safirova (United States Geological Survey, USA) <i>Trends in secondary vs. primary metal production: A global overview and evidence from selected countries</i></p> <p>Gabriel Icarte (University of Bremen, Germany) <i>A comparison of mechanisms for optimal decisions in open-pit mining</i></p> <p>Gerald Steiner, Bernhard Geissler (Donau-Universität Krems, Austria) <i>Toward a circular P economy: The role of mining</i></p> <p>Safak Gokhan Ozkan (Istanbul University, Turkey) <i>Borate's mining in Turkey and possible use for solar energy panels</i></p> <p>Nga Nguyen (Hanoi University of Mining and Geology, Vietnam) <i>Energy coal import in Vietnam: the status quo and perspectives</i></p>	<p>Joep van den Broeke (Royal Eijkelpark, Netherlands) <i>Sonic Coring Coupled with on-site automated material characterisation</i></p> <p>Stephan Peters (DMT GmbH & Co. KG, Germany) <i>The new Slim Borehole Scanner – An improved instrument for optimization of the roof support in underground mining: An example from underground room and pillar coal mining</i></p> <p>Horst Hejny (MinPol GmbH, Austria) <i>Sustainable Low Impact Mining solution for exploitation of small mineral deposits based on advanced rock blasting and environmental technologies - SLIM</i></p> <p>Richardson Nascimento (Federal University of Ouro Preto, Brazil) <i>Introducing systems theoretic process analysis (STPA) to autonomous drilling system</i></p> <p>Takashi Sasaoka (Kyushu University, Japan) <i>Guidelines for appropriate support system and control criteria for main roadway under weak geological conditions in Indonesia</i></p>	

Morning Tea (Foyer)

Exhibition & Poster Session

11:45

-

12:00

Thursday 24 May

PPS Auditorium, Prof.-Pirlet-Straße 12

Keynote PPS H1

12:00

Barrie Johnson (Bangor University, UK)

The evolution, current status and future prospects for using biotechnologies in the mineral extraction and metal recovery

Panel Discussion:

12:30

Mines of the future need to be different from those of today?

Experts:

Lena Alagangas (Luleå University of Technology, Sweden)

Bernhard Dold (Luleå University of Technology, Sweden)

Jan Johansson (Luleå University of Science, Sweden)

Mustafa Kumral (McGill University, Canada)

Carlos Petter (Camborne School of Mines, UK)

Dominic Roberts (Mineco Ltd, UK)

Bernd Lottermoser (Conference Chair)

13:10

Closing remarks

Lunch

13:15

Exhibition & Poster Session

End of the First International Conference

14:15

Mines of the Future

Poster Presentations

PPS Auditorium, Prof.-Pirlet-Straße 12, Foyer

Marcos Paulo Torre (Federal University of Ouro Preto, Brazil) | **A description of a cone crusher model validation and verification for control design**

Max Berner (RWTH Aachen University, Germany) | **A discrete-event simulation approach to improve decision-making in production planning**

Justus Freer (RWTH Aachen University, Germany) | **Assessment of airborne particulate pollution around surface quarries: Reliable quantification of mineral dust emissions and deposition**

M. Mustafa Kahraman (Gumushane University, Turkey) | **Balanced scorecards for benchmarking in mining operations**

Eduardo Cota (Federal University of Ouro Preto, Brazil) | **Buffer tank control for dampen disturbances in an iron ore concentrate dewatering plant**

Danuta Szyszka (Wroclaw University of Science and Technology, Poland) | **Characterizing frothers through critical coalescence concentration (CCC) and hydrophile-lipophile balance (HLB) relationships**

Sebastian Iwaszenko (Central Mining Institute, Poland) | **Coal images database and its application for selected coal grains properties analysis**

Marcos Paulo Torre (Federal University of Ouro Preto, Brazil) | **Control of underflow solids concentration on a simulated thickener**

Danuta Szyszka (Wroclaw University of Science and Technology, Poland) | **Critical Coalescence Concentration (CCC) for surfactants in aqueous solutions**

Saeid Moradi (University of Exeter, UK) | **Designing the Imp@ct modular mobile containerised mineral processing plant**

Justyna Górnica-Zimroz (Wroclaw University of Science and Technology, Poland) | **Dimension and crushed stones extraction as a source of social and environmental conflicts in Poland**

Lisa Schwark (RWTH Aachen University, Germany) | **Formation and modification of apparently I-type granites as part of a large S-type granite in the Damara orogen (Namibia)**

Stefan Schymura (Helmholtz-Zentrum Dresden-Rossendorf, Germany) | **GeoPET data for parametrization of reactive transport codes**

Shanker Krishna (Indian Institute of Technology Madras, India) | **High resolution ground penetrating radar data analysis including split spread Fourier migration to delineate subsurface objects in a mine prior to excavation**

Poster Presentations

PPS Auditorium, Prof.-Pirlet-Straße 12, Foyer

Kemal Gutić (University of Tuzla, Bosnia and Herzegovina) | ***Magnesium ore in the function of obtaining a substance for the development of nanotechnology***

Shanker Krishna (Indian Institute of Technology, India) | ***Methodology to estimate micro level geomechanical properties of an open cast mine using 3D seismics***

Lara Amelie Hauck (RWTH Aachen University, Germany) | ***Platinum-group metal resources of Indonesia***

Tobias Braun (RWTH Aachen University, Germany) | ***Potentials for belt conveyor application in German hard-rock open pit mines***

Marjan Knobloch (RWTH Aachen University, Germany) | ***Prediction of the acid and metalliferous drainage-forming potential for the Gorazde antimony deposit, Bosnia-Herzegovina***

Daniela Gallhofer (RWTH Aachen University, Germany) | ***Quantitative analysis of critical elements in geological materials using portable X-ray fluorescence (pXRF) spectrometers***

Justyna Górnjak-Zimroz (Wroclaw University of Science and Technology, Poland) | ***Quantitative and qualitative research of waste resulting from mining of rock raw materials in Lower Silesia***

Lucas Weimer (RWTH Aachen University, Germany) | ***Scoping criticality indicators for battery raw materials***

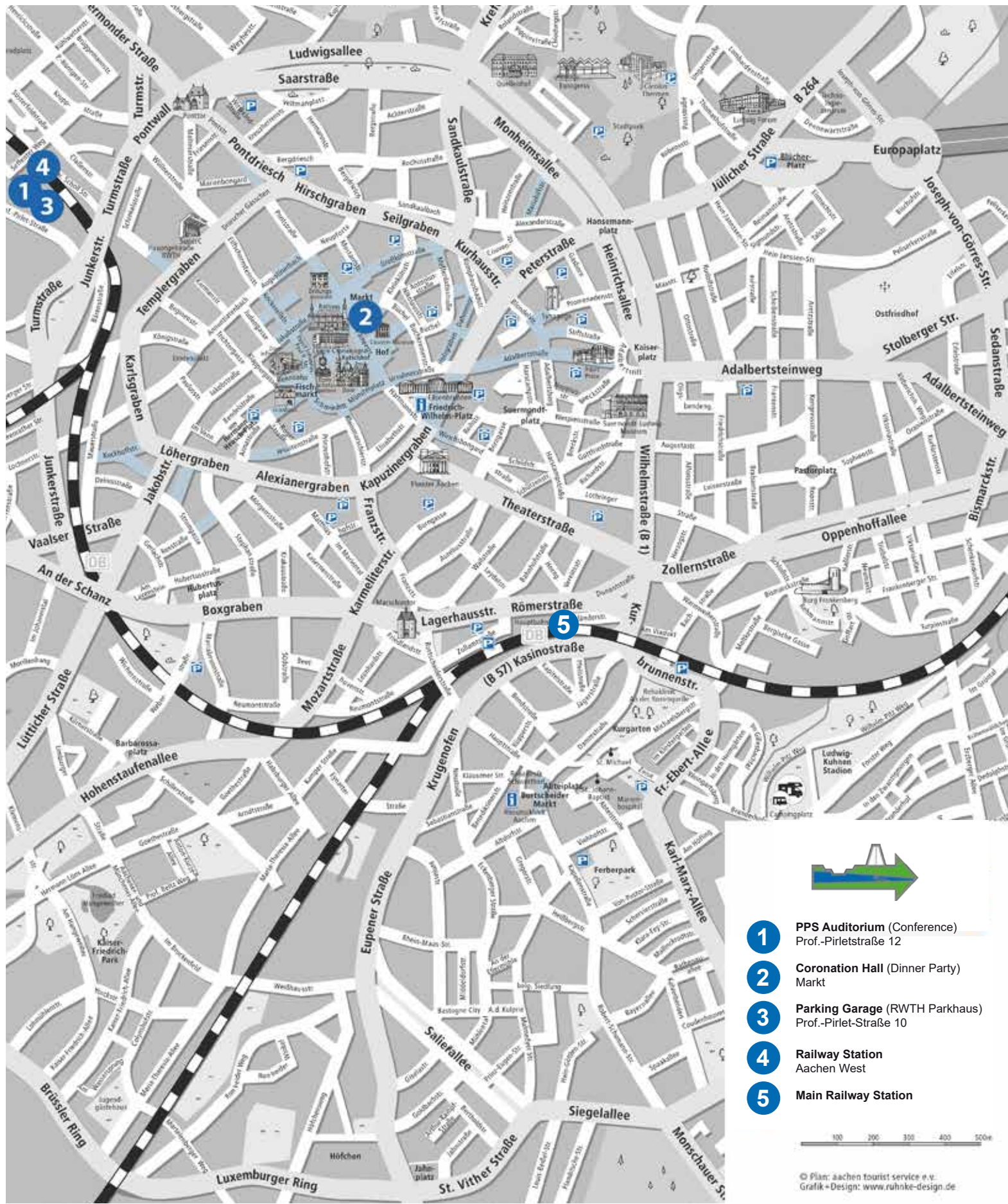
Maria Wierzbicka-Wieczorek (RWTH Aachen University, Germany) | ***Sulfidic ores of the Rio Tinto copper deposit, Iberian Pyrite Belt, Spain: Resources of critical raw materials?***


E. Richardson Nascimento (Federal University of Ouro Preto, Brazil) | ***Towards a cooperative method for 3D magnetic maps generation using small and autonomous aerial robots for mining applications***

Marius Braun (RWTH Aachen University, Germany) | ***Ventilation systems for future mining operations***

Rudolf Suppes (RWTH Aachen University, Germany) | ***Virtual Reality in education of prospective young mineral resources engineering professionals***

Conference Venue | Map



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- 1** PPS Auditorium (Conference)
Prof.-Pirletstraße 12
 - 2** Coronation Hall (Dinner Party)
Markt
 - 3** Parking Garage (RWTH Parkhaus)
Prof.-Pirlet-Straße 10
 - 4** Railway Station
Aachen West
 - 5** Main Railway Station

