PRELIMINARY PROGRAM* (as of 03 March 2020)
Conference Venue: PPS Auditorium, Prof.-Pirlet-Str.12, Aachen

Wednesday 01 April 2020

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

Thursday 02 April 2020

08:45-09:00 Welcome
BG Lottermoser (RWTH Aachen University, Aachen, Germany)

Table: PPS H1

Resources opportunities and constraints
Chair: BG Lottermoser

09:00 Keynote: Current developments on the international metal markets
Buchholz, P (DERA/BGR, Berlin, Germany)

09:30 Technological innovations for more efficient mineral resource exploration
T Gorka (DMT GmbH & Co. KG, Essen, Germany)

09:45 15 years of introducing AI methods into exploration targeting - an experience report: background, advangeo® prediction software and projects
A Knobloch (Beak Consultants GmbH, Freiberg, Germany)

10:00 New data, metallogenic models & mineral predictive mapping open new perspectives for the historical mining district of the German Erzgebirge
A Brosig (Beak Consultants GmbH, Freiberg, Germany)

10:15 The discovery of stratiform tin in the German Erzgebirge and its metallogenic implications
A Barth (Beak Consultants GmbH, Freiberg, Germany)

10:30-11:15 Morning Tea & Poster Session
**Thursday 02 April 2020**

### PPS H1

#### Resources opportunities and constraints

**Chair:** A Butcher

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker, Affiliation</th>
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<tbody>
<tr>
<td>11:15</td>
<td>Mineralogy: Critical to the recovery of byproduct critical elements</td>
<td><em>SM Hayes (U. S. Geological Survey, Reston, Virginia, USA)</em></td>
</tr>
<tr>
<td>11:30</td>
<td>Germanium in sphalerite from Zn-Pb deposits in the USA: Insight into ore genesis and implications for resource recovery</td>
<td><em>NM Piatak (U.S. Geological Survey, Reston, Virginia, USA)</em></td>
</tr>
<tr>
<td>11:45</td>
<td>High purity quartz resources in Finland: Some preliminary results</td>
<td><em>T Al-Ani (Geological Survey of Finland, Espoo, Finland)</em></td>
</tr>
<tr>
<td>12:00</td>
<td>pXRF measurements on soil samples in the vicinity of a W deposit and Nb-Ta prospect: example from the Echassières district (France)</td>
<td><em>B Lemiere (BRGM, Orléans, France)</em></td>
</tr>
<tr>
<td>12:15</td>
<td>Lithium exploration, geologic modelling, resource estimation and mine planning for a spodumene-bearing pegmatite deposit in Ontario, Canada,</td>
<td><em>S Peters (DMT GmbH &amp; Co. KG, Essen, Germany)</em></td>
</tr>
<tr>
<td>12:30</td>
<td><strong>Keynote:</strong> Biohydrometallurgy &amp; BRGM: past, present and future perspectives</td>
<td><em>C Bryan (BRGM, Orléans, France)</em></td>
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#### Innovation and technologies

**Chair:** P Buchholz

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<tr>
<td>14:00</td>
<td><strong>Keynote:</strong> Rock Science is more complicated than Rocket Science? Overcoming challenges in 2D-3D-4D imaging and the analysis of complex ore textures in mineral deposits.</td>
<td><em>A Butcher (Geological Survey of Finland, Espoo, Finland)</em></td>
</tr>
<tr>
<td>14:30</td>
<td>Continuous and unbiased geological 3D data in real time by X-ray tomography and fluorescence drill core scanning</td>
<td><em>A Hansson (Orexplore AB, Kista, Sweden)</em></td>
</tr>
<tr>
<td>14:45</td>
<td>The use of systematic sampling and XRF-XRT based scanning to determine potential recovery of metals from waste rock</td>
<td><em>M Bäckström (Bergskraft Bergslagen AB, Kumla, Sweden / Man-Technology-Environment Research Centre, Örebro University, Örebro, Sweden)</em></td>
</tr>
<tr>
<td>15:00</td>
<td>X-ray based sorting in the preprocessing of ore – preliminary results from Lovisagruvan, Sweden</td>
<td><em>L Sartz (Bergskraft Bergslagen AB, Kumla, Sweden)</em></td>
</tr>
<tr>
<td>15:15</td>
<td>The selection of an optimal sensor for sensor-based sorting using automated mineralogy and machine learning</td>
<td><em>M Kern (Helmholtz Institute Freiberg for Resource Technology, Germany)</em></td>
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#### Lunch & Poster Session

13:00

#### Afternoon Tea & Poster Session

15:30
### PPS H1: Innovation and technologies

**Chair:** A Fourie

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<thead>
<tr>
<th>Time</th>
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<tr>
<td>16:00</td>
<td>Digital transformation in the mining industry – a platform-based approach</td>
<td><strong>A Emons</strong> (SST, Aachen Germany)</td>
</tr>
<tr>
<td>16:15</td>
<td>Limestone production process audit with a 3D online measurement system</td>
<td><strong>AS Parmar</strong> (University of Liège, Liège, Belgium)</td>
</tr>
<tr>
<td>16:30</td>
<td>Towards improved shaft maintenance</td>
<td><strong>C Gekonde</strong> (Clausthal University of Technology, Clausthal-Zellerfeld, Germany)</td>
</tr>
<tr>
<td>16:45</td>
<td>The flotation of heavy metal contaminated clinoptilolite using cationic surfactant collectors, for rapid dewatering separation</td>
<td><strong>MY Prajitno</strong> (University of Leeds, Leeds, United Kingdom)</td>
</tr>
<tr>
<td>17:00</td>
<td>Characterisation of material flows using the principles of data fusion</td>
<td><strong>A Radl</strong> (RWTH Aachen University, Aachen, Germany)</td>
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### PPS H2: Resources opportunities and constraints

**Chair:** L Huang

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>16:00</td>
<td>How does Poland ensure future supply of minerals?</td>
<td><strong>K Szamałek</strong> (Polish Geological Institute-NRI, Warsaw, Poland)</td>
</tr>
<tr>
<td>16:15</td>
<td>Raw material extraction pathways for a low-carbon electricity generation</td>
<td><strong>A Boubault</strong> (BRGM, Orléans, France)</td>
</tr>
<tr>
<td>16:30</td>
<td>Historic mine sites revisited</td>
<td><strong>H Sievers</strong> (Bundesanstalt für Geowissenschaften und Rohstoffe, Hannover, Germany)</td>
</tr>
<tr>
<td>16:45</td>
<td>The EU best available techniques reference document for the management of waste from extractive industries</td>
<td><strong>E Garbarino</strong> (European Commission Joint Research Centre, Seville, Spain)</td>
</tr>
<tr>
<td>17:00</td>
<td>Investigation of a sustainable marble residual processing plant</td>
<td><strong>F Büyükbayrak</strong> (Imerys, Performance Minerals, Balikesir, Turkey)</td>
</tr>
<tr>
<td>17:15</td>
<td>Impact of political decisions on mining operations in the Rhinesh Lignite Area</td>
<td><strong>C Niemann-Delius</strong> (RWTH Aachen University, Aachen, Germany)</td>
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**19:00**

**DINNER PARTY**

Couven-Hall, Kármánstraße 19, Aachen
### Mining and the environment

**Chair:** H Ehnes

#### 09:00

**Keynote:** The long road to ensuring safe and stable tailings storage facilities

*A Fourie (University of Western Australia, Perth, Australia)*

#### 09:30

**Keynote:** Research challenges in developing game-changing tailings rehabilitation technology

*L Huang (The University of Queensland, Brisbane, Australia)*

#### 10:00

Biogeochemical behavior of pyrrhotitic mine tailings in reclaimed and unreclaimed conditions

*M P Ethier (Université du Québec en Abitibi-Témiscamingue, Rouyn-Noranda, Canada)*

#### 10:15

Critical element resource potential of mill tailings from diverse mineral deposit types

*R R Seal (US Geological Survey, Reston, USA)*

#### 10:30

Application of Raman spectroscopy for near real-time mineralogical characterization of mine tailings for reprocessing approach at the polymetallic Cerro de Pasco deposit, Peru

*M Tenhunen (Timegate Instruments, Oulu, Finland)*

#### 10:45

Morning Tea & Poster Session

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### Mining and society

**Chair:** BG Lottermoser

#### 11:15

Understanding water risks in mining – safeguarding water to protect business value

*L Gilsbach (Federal Institute for Geosciences and Natural Resources, Hannover, Germany)*

#### 11:30

**Keynote:** Non-renewable raw materials for a sustainable future – a public and private effort

*T Kauppila (Geological Survey of Finland, Kuopio, Finland)*

#### 12:00

**Keynote:** VISION ZERO - challenges and opportunities for the global mining industry and supply chains

*H Ehnes (Vision Zeero, Germany)*

#### 12:30

Closing Words

*BG Lottermoser (RWTH Aachen University, Aachen, Germany)*

#### 12:30

Lunch
A novel approach for sustainable tailing management
**D Navas** (Clariant SE, Tarragona, Spain)

Advanced platinum group metal (PGM) extraction by microwave leaching
**TA Atia** (VITO, Flemish Institute of Technology, Mol, Belgium)

Aqueous surfactant solutions for dust suppression in open pit mines: the influence of different soil textures on wettability
**J Freer** (RWTH Aachen University, Aachen, Germany)

Behavior of critical element tellurium in the surficial environment
**SM Hayes** (U. S. Geological Survey, Reston, Virginia, USA)

Characteristics and origin of detrital Fe-Ti oxides in heavy mineral sands of Namibia
**S Lohmeier** (RWTH Aachen University, Aachen, Germany)

Correcting calibration curves for field portable XRF analysis
**S Lohmeier** (RWTH Aachen University, Aachen, Germany)

Critical element resource potential of mill tailings, Namib Pb-Zn mine, Namibia
**S Lohmeier** (RWTH Aachen University, Aachen, Germany)

Designing the dimensions of rock foundations in underground mines by the ground reaction curve.
**A Gholami** (Tamin Madan Seraj, Tehran, Iran)

Evaluation of the impact of sampling protocol in resources estimates of a free gold deposit from Iron Quadrangle, Brazil
**CN Mafra** (Universidade de Sao Paulo, Sao Paulo, Brazil)

Exploration biogeochemistry in the Western Europe environment, an example from Sb deposits.
**B Lemiere** (BRGM, Orleans, France)

From resource depletion to resource inaccessibility in function of sustainable resource management
**J Dewulf** (Ghent University, Ghent, Belgium)

GeoERA Raw Materials supporting Europe’s mining future
**A Wittenberg** (BGR, Hannover, Germany)

In fact, Innovative non-invasive and fully acceptable exploration technologies
**I Benighaus** (Dialogik, Stuttgart, Germany)

Limitations of pXRF tools in low grade Sn-W pegmatite exploration (Sandamap Noord Tin pegmatites)
**F Mbingeneeko** (University of Namibia, Keetmanshoop, Namibia)
Lithium-bearing brines in the Upper Rhine Graben, Germany
L Schwark (RWTH Aachen University, Aachen, Germany)

Modernising the tertiary education of mining engineering students: designing new blended learning tools
L Waszak (RWTH Aachen University, Germany)

Okorusu tailings dump, Namibia: a possible resource of REE and fluorite
S Lohmeier (RWTH Aachen University, Aachen, Germany)

Secondary neodymium resources in Europe and their recycling potential
SS van Nielen (Universiteit Leiden, Leiden, The Netherlands)

SmartH2OEnergy – Developing the hydroelectric power potential of Peruvian mine sites
Y Feldmann (RWTH Aachen University, Aachen, Germany)

The analytical capability of XL3t GOLDD+ 950 thermoscientific Niton portable X-ray fluorescence
F Mbingeneeko (University of Namibia, Keetmanshoop, Namibia)

The Development of Holistic Geometallurgical Models
K Bachmann (Helmholtz Institute Freiberg for Resource Technology/ Erzlabor Advanced Solutions GmbH, Freiberg, Germany)

Towards a framework for the comprehensive classification of tailings deposits: methodology and outlook
R Suppes (RWTH Aachen University, Aachen, Germany)

Trace element concentrations in the Kombat deposit of Otavi Mountain Land, Namibia
E Shalimba (University of Namibia, Namibia)

Uis tailings, Namibia: a potential resource for high-technology metals
S Lohmeier (RWTH Aachen University, Aachen, Germany)

Using portable X-ray fluorescence in the exploration of carbonate-hosted sulphide mineralization (Otavi Mountain Land, Namibia)
E Shalimba (University of Namibia, Namibia)

VMS deposit prospectivity mapping using integration of GIS and landsat 7 ETM+ in Wetar Island, Indonesia
G Laimeheriwa (RWTH Aachen University, Aachen, Germany)

Geoenvironmental modelling of hydrothermal stibnite-quartz deposits
M Knobloch (RWTH Aachen University, Aachen, Germany)