

Monday 16th November

Technical Session 1
Chairpersons: A. Menzies (Bruker Nano Analytics GmbH, Germany) and A. Butcher (Bruker, UK)

Keynote Lecture: Process mineralogy for critical metals in mineral processing and extractive metallurgy
Tassos Grammatikopoulos (SGS Natural Resources, Canada)

Mineralogical constraints on critical elements recovery from Moroccan carbonatites and implications for processing strategies
Laila Sellami, Y.A. Khouia, M. Benzaazoua, Y. Taha (Mohammed VI Polytechnic University, Morocco) and L. Filippov (Université de Lorraine , France)

Multidisciplinary characterization of critical European lithium ores
Jussi Liipo, S. Malmi (Metso Research Center, Finland), S. Delchini, K. Bru, H. Pillière, N. Maubec and F. Bodenan (BRGM, France)

Hyperspectral mapping of lithium-bearing micas in Variscan Li bearing granite systems using Al-OH spectral shifts and multivariate analysis
Lebogang Babedi, R. Fitzpatrick, R. Shail (Camborne School of Mines, UK) and J. Strongman (Petrolab Ltd, UK)

Flowsheet development and selective flotation of lithium minerals from the Moose II pegmatite, Canada
Espoir M. Murhula, L. Mwenee, C. Gibson (Queen's University, Canada), G.L. Dzemua (NWT Geological Survey, Canada), W. Wang (University of Texas, USA) and T. Grammatikopoulos (SGS Natural Resources, Canada)

Lithium (Li) mineral characterization of drill cores from the Alijo Project, Portugal
Andrew Menzies (Bruker Nano Analytics GmbH, Germany), C. de Siqueira Assumpção (AMG Brasil, Brazil), F.S. Gonçalves (AMG Portugal, Portugal) and M. Venter (AMG Lithium GmbH, Germany)

In- situ time-gated Raman monitoring of lithium mineral calcination in a rotary furnace
Jari Havisto, A. Pasanen, H. Lindström, N. Spegazzini, A. Mäyrä, H. Vasama, J. Tenhunen, M. Paavola and K. Rahkamaa-Tolonen (VTT Technical Research Centre of Finland Ltd, Finland)

Technical Session 2
Chairpersons: L. Sellami (Mohammed VI Polytechnic University, Morocco) and N. Shackleton (AECI Mining Chemicals, South Africa)

Maintaining the gold standard in platinum jewellery
Simona Poelinca and K. Youlton (SGS, South Africa)

Mineralogical analysis and metallurgical testwork on gold ores from the Frotet Project
Naoki Igarashi (Sumitomo Metal Mining Co. Ltd, Japan)

From the smallest (Rum) to the largest (Bushveld) layered intrusions and their PGM´s: implications for exploration and geometallurgy
Alan R. Butcher (ButcherGeologica, UK) and A.H. Menzies (Bruker Nano Analytics GmbH, Germany)

Mine-plan-informed CMC depressant blend selection using XRD and microflotation of Western Bushveld PGM lithological domains
Natalie J. Shackleton, V. Malysiak, O. Muswadzi and R. Madiba (AECI Mining Chemicals, South Africa)

Petrogenesis and mineralogical variability within the UG1 chromitite horizons at Bokoni Platinum Mines: beneficiation and implications
Boitshepo Masetlha, B. Von der Heyden and M. Tadie (Stellenbosch University, South Africa)

Process mineralogical characterisation of historical tin mine wastes for recovery of In, Sn, Sb, W, and Bi
Steve J. Chingwaru, O. Mejías, R. Blannin, N. Fox and A. Parbhakar-Fox (The University of Queensland, Australia)

Tuesday 17th November

Technical Session 3
Chairpersons: E. Murhula (Queen's University, Canada) and S. Burness (University of Cape Town, South Africa)

Keynote Lecture: Advancing process understanding through particle-based separation modelling
Lucas Pereira (Helmholtz Institute Freiberg for Resource Technology, Germany)

Coal fly ash as a secondary source of rare earth elements: mineralogical characterisation, speciation, and alkali roasting pretreatment
Nomsa Baloyi and Z. Baloyi (University of Johannesburg, South Africa)

Apatite as the primary REE host in the Hecla-Kilmer IOCG Deposit: implications for simplified processing in western rare earth development
Tassos Grammatikopoulos (SGS Canada Inc., Canada), R. Glazier and J. Galenzoski (NeoTech Metals Corp, Canada)

OreCraft: a geometallurgical strategy game for teaching process mineralogy under uncertainty
Mehdi Parian (Luleå University of Technology, Sweden) and P. Lamberg (AA Sakatti Mining Oy (Anglo American), Finland

Normalization of recovery and yield of geometallurgical concentration tests
Claudio Schneider (CETEM, Brazil), F. Gontijo, Á. Leães and J.F.C.L. Costa (Federal University of Rio Grande do Sul, Brazil)

Development of a geometallurgical framework for predicting ore hardness from geochemistry and mineralogy in a mineral sands deposit
Sibulele Mgoduka, A. van der Westhuizen, M. Becker (University of Cape Town, South Africa) and C. Philander (Tronox Mineral Sands, South Africa)

Technical Session 4
Chairperson: J. Liipo (Metso Research Centre, Finland)

From rough surfaces to reliable data: advancing SEM mineralogy workflows for complex samples
Matt Hiscock and H. Jiang (Oxford Instruments Materials Analysis, UK)

Vanadium deportment in the Middle Ore Layer (MOL) of the Mustavaara Fe–Ti– V deposit, Northern Finland: implications for beneficiation
Minna Markkanen (University of Turku and Geological Survey of Finland, Finland), T. Chernet, T. Karinen, E.M. Jolis (Geological Survey of Finland), R.M. Michallik (Geological Survey of Finland and Univesity of Western Australia) and E. Heilimo (University of Turku, Finland)

A multi-scale and multi-instrument approach to understanding the deportment of Co, Bi and Ag in the Swartberg polymetallic sulphide ore
A. Mulelu, M. Becker (University of Cape Town, South Africa), Sara Burness, T. Molaolwe-Dipitso (Black Mountain Mine, South Africa), W. Price (Vedanta Zinc International, South Africa) and A. Menzies (Bruker Nano Analytics GmbH, Germany)

Mineralogical and textural controls on the magnetic separation of Fe–Ti oxides from apatite-rich rocks in the upper zone of the Bushveld Complex
Themba Mothupi, H. Mandende and M. Raleaka (Council for Geoscience, South Africa)

Wednesday 18th November

Technical Session 5
Chairpersons: M. Parian (Luleå University of Technology, Sweden) and M. Hiscock (Oxford Instruments Materials Analysis, UK)

Pore-scale investigation of uranium leaching in low-grade rocks via Spectral X-ray Tomography: evidence for the role of analcimes in uranium mobilization
Maud Herbelin, S. Hocquet (Orano Mining, France), O. Mangane, S. Faucher. J. Diaz, P. Moonen and P. Creux (NRS/TOTAL/UNIV PAU & PAYS ADOUR/ E2S UPPA, France)

Toward library-free mineral identification from EDS spectra
Bilal H. Aslan, G. Nitschke (University of Cape Town, South Africa), J. Knapp (Hitachi High-Tech America Inc., USA) and C.Ly (Bruker Nano Analytics, USA)

Development of µXRF in process mineralogy
Chi V. Ly (Bruker BNA, USA) , K. Halse (Portable Spectral Services, Australia), R. Van Der Bank and G. Nitschke (University of Cape Town, South Africa)

Coarse Particle Liberation Analysis by µXRF
Rory Colville (Petrolab, Ltd, UK)

Development of a textural characterization index for mineral liberation studies based on grain morphology and particle-scale relationships
Percy Escalante, J. Oliva, H. Anticoi and C.H. Sampaio (Universitat Politècnica de Catalunya, Spain)

Machine learning for automated texture classification of Ni-Cu-PGE ores: a comparative study from Västerbotten, Sweden
Aghata Z. Viana, N.K.S. Aragon C. Lund and M. Parian (Luleå University of Technology, Sweden)

Technical Session 6
Chairperson: M. Becker (University of Cape Town, South Africa)

Towards a quantified predictive texture classification framework for chromitite breakage behaviour
D. Chetty, Ansa Nke, D. Mashaba, J. Ngwane and S. Nkwanyana (Mintek, South Africa)

Online mineralogy inference and impact on flotation performance: an industrial case study
Attie L. Haasbroek, W. Morgan, L. Auret (Stone Three, South Africa), P. Ndlovu and T. Nkogatse (Valterra Platinum, South Africa)

Flowsheet optimization using mineral characterization and FLS coarseAIR™ flotation
Thomas Bujnowski, K. Davis and J. Bowden (FLS, USA)

A preliminary process mineralogical study for revalorisation of the Storgangen tailings, SW Norway

Bendik S. Frantzen, B.E. Sørensen and K. Aasly (Norwegian University of Science and Technology, Norway)