

## Physical Separation '19

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### Wednesday 12th June

16.30-18.00 Welcoming wine and cheese function and pre-registration (accompanying guests welcome)

### Thursday 13th June

08.00 Registration desk opens. Tea, coffee and fruit juice

08.55 Welcome to Cornwall  
B.A. Wills (MEI, UK)

09.15 *Technical Session 1*  
Chairmen: TBA

09.15 **Keynote Lecture: What's cooking in mining?**  
S. Kingman, University of Nottingham, UK

09.45 **High-temperature permittivity measurements of selected industrially relevant minerals and ores**  
E.R. Bobicki (University of Toronto, Canada) and C.A. Pickles (Queen's University, Canada)

10.00 **High-temperature microwave properties and phase transitions of ultramafic nickel ores**  
J. Forster and E.R. Bobicki (University of Toronto, Canada)

10.15 Coffee, tea

11.00 **An improvement on grindability of copper porphyry ore by a correct selection of microwave-treatment's location in comminution circuit**  
H. Gholami, B. Rezai, A. Mehdilo (Amirkabir University of Technology, Iran), A. Hassanzadeh, M. Rudolph (Helmholtz-Institute Freiberg for Resource Technology, Germany), M.J. Behjat (Sarcheshmeh Copper Mine, Iran)

11.15 **Investigating the microwave heating behaviour of pyrrhotite tailings**  
M. Goldbaum, R. Elliott, J. Forster, Y. Maham and E.R. Bobicki (University of Toronto, Canada)

11.30 **Gangue rejection in practice - the implementation of Grade Engineering® at the Minera San Cristobal Site**  
B. Adair, L. Keeney (CRC ORE, Australia) and D. King (Minera San Cristobal, Bolivia)

11.45 **Enhancing grade engineering through rock breakage by high-speed collisions**  
R.A.F. Lage, C. Antonio and V. Jokovic (JKMRC, Australia)

12.00 **Energy-efficient high-velocity comminution of Platreef platinum ores by VeRo Liberator®**  
G. Borg (PMS GmbH, Germany and Martin Luther University Halle-Wittenberg, Germany), O. Scharfe1 and F. Scharfe (PMS GmbH, Germany)

12.15 **Enhancing early coarse gangue rejection through controlled multistage precise impact breakage**  
B.S. Agbenuvor, C. Antonio, V. Jokovic and R. Morrison (JKMRC, Australia)

- 12.30 **Continuous electric pulse fragmentation of incinerator bottom ash: two years of industrial operation**  
D.B. Parvaz, A. Weh and F. von der Weid (SEFRAG AG, Switzerland)
- 12.45 Lunch
- 14.00 *Technical Session 2*  
Chairmen: TBA
- 14.00 **Pre-concentration at crushing sizes for low-grade ores processing – ore macro texture characterization and liberation assessment**  
R. Sousa (National Laboratory of Energy & Geology, and University of Porto, Portugal), A. Futuro, A. Fiúza (University of Porto, Portugal) and M.M. Leite (National Laboratory of Energy and Geology, Portugal)
- 14.15 **Bulk ore sorting using magnetic resonance sensing**  
P.J. Coghill, N.G. Cutmore, D.G. Miljak (CSIRO Mineral Resources, Australia), C. Beal and A.S. Broesder (RFC Ambrian Limited, Australia)
- 14.30 **Latest Developments and experience on TOMRA X-Ray Sorting Machines with a focus on coal**  
J.-M. Bergmann (TOMRA Sorting GmbH, Germany)
- 14.45 **Using advanced block modelling techniques to provide dynamic, high-resolution economic assessment of the impact of ore sorting on a complex world class deposit**  
J. McFarlane, D. Tucker (Mining Plus UK Ltd., UK) and K. Bartram (Steinert GmbH, Germany)
- 15.00 **A novel approach for sensor based sorting performance determination**  
E. Gülcan (Hacettepe University, Turkey)
- 15.15 Coffee, tea
- 16.00 **New revolutionary X-ray sorting technology based on high sensitivity detection system**  
J. Kolacz (Comex Polska, Poland)
- 16.15 **Affinity of Dual Energy X-ray Transmission Sensors on minerals bearing heavy rare earth elements**  
M.M. Veras, C.R. Born, A.K. Ferreira, A.C.B. Neto, C.O. Petter, C.H. Sampaio (Federal University of the Rio Grande do Sul, Brazil), A.S. Young (University of Utah, USA) and A. Szewczuk (COMEX AS, Poland)
- 16.30 **Boosting the efficiency of ore sorting using ML on SWIR sensor data**  
L. Tuşa, M. Kern, M. Khodadadzadeh, R. Gloaguen and J. Gutzmer (Helmholtz Institute Freiberg for Resource Technology, Germany)
- 16.45 **Using electrically heated screen decks for producing narrow sub-millimetre fractions**  
B.I. Pålsson (Luleå University of Technology, Sweden) and J. Bucht (LKAB, Sweden)
- 18.00 Meet on seafront outside Falmouth Hotel for optional guided coastal walk, ending at Chain Locker pub by the inner harbour (accompanying guests welcome)

## Friday 14th June

- 07.45 Registration desk opens. Tea, coffee and fruit juice
- 08.30 *Technical Session 3*  
Chairmen: TBA
- 08.30 **Granular flow modelling for inclined vibrating screens**  
O. Ogunmodimu (JKMRC, Australia), I. Govender (University of KwaZulu-Natal, South Africa), A. Mainza and J.-P. Franzidis (University of Cape Town, South Africa)
- 08.45 **Can the performance of semi-inverted hydrocyclones be similar to fine screening?**  
V. Jokovic (JKMRC, Australia)
- 09.00 **Mini-hydrocyclone design optimisation – the effect of conical height on the separation of fine particles**  
P.R. Brito-Parada, H. Brookes and D. Vega-Garcia (Imperial College, UK)
- 09.15 **Development of a coupled DEM-SPH method to simulate complex fluid flows inside hydrocyclones**  
A. Eslamian, C. Peng and E. Monaco (ESS Engineering Software Steyr GmbH, Austria)

- 9.30 **Correlations for hydrocyclone performance from CFD for application in process modelling**  
M.P. Schwarz, T. Song, T. Yang, J. Zhou and Q. Wang (BGRIMM Technology Group, China, State Key Laboratory of Process Automation in Mining & Metallurgy, China, and Beijing Key Laboratory of Process Automation in Mining & Metallurgy, China)
- 09.45 **Effect of air classifier parameters on the processing of palygorskite**  
A. Razzaq, M. Nazir, A. Sajid and M.B. Hayat (University of Engineering and Technology, Lahore, Pakistan)
- 10.00 **Pre-concentration of phosphate mining tailings by sizing and gravity separation for recovery of critical materials**  
P. Zhang, Zhen Jin, G. Allaedini (Florida Industrial and Phosphate Research Institute, USA) and D. DePaoli (Oak Ridge National Laboratory, USA)
- 10.15 Coffee
- 10.45 **Influence of process variables on screw classifier performance to achieve the product quality**  
P. Singh, C.R. Kumar and D.P. Chakraborty (Tata Steel Ltd, India)
- 11.00 **Gravity separation in the Reflux™ Classifier in the presence of slimes**  
J.L. Carpenter, J. Zhou, S.M. Iveson and K.P. Galvin (University of Newcastle, Australia)
- 11.15 **Effect of electrostatic interactions in the separation of magnetite and silica in aqueous media using enhanced gravity concentration**  
K.L.D. Baladad and H.D. Mendoza (University of the Philippines Diliman, Philippines)
- 11.30 **New insights in the development of a fluid dynamic-based model of the ultrafine Falcon concentrator**  
G. Dadabie, Y. Foucaud, J.-S. Kroll-Rabotin, L.O. Filippov (Université de Lorraine, France) and Q. Dehaine (Université de Lorraine, France, and Camborne School of Mines, UK)
- 11.45 **A particle-based approach to simulation of spiral concentrators incorporating autoSEM characterisation**  
C.P. Bergmann (Mintek, South Africa), N. Naudé and J. de Villiers (University of Pretoria, South Africa)
- 12.00 **Process control for gravity spirals**  
A. Russel and D.N.C. Phillpotts (Mintek, South Africa)
- 12.15 **Application of through-screen jigging for flexible processing of base metals: a case study of lead carbonate (cerussite) ores**  
S. Moradi, L.W. Palmer, K. Moore (Camborne School of Mines, UK), T. de Boer and J. van der Hoeven (Royal IHC, The Netherlands)
- 12.45 **Kinetic investigation of dry separation using the sink-hole fluidizer**  
D. Kumar, S. Iveson and K. Galvin (University of Newcastle, Australia)
- 13.00 Lunch
- 14.00 *Technical Session 4*  
Chairmen: TBA
- 14.00 **Investigation of particle motion in fluidized bed using PEPT**  
O. Kökkılıç, D. Boucher, R. Langlois, K.E. Waters (McGill University, Canada) and T. Leadbeater (University of Birmingham, UK, and University of Cape Town, South Africa)
- 14.15 **Optimization of sustainable dry processing of kaolin**  
M. Danishwara, A. Hamida and M.B. Hayat (University of Engineering and Technology, Lahore, Pakistan)
- 14.30 **Processing of a rare-earth ore by gravity and magnetic concentration**  
C. Marion, J. Paris, K.E. Waters (McGill University, Canada), T. Grammatikopoulos (SGS Canada Inc., Canada) and N.A. Rowson (Master Magnets, UK)
- 14.45 **Up-grading of Cr in stainless steel slag and ferrochromium slags by magnetic and density separation**  
F. Kukurugya, P. Nielsen and L. Horckmans (VITO - Flemish Institute for Technological Research, Belgium)
- 15.00 **Upgrading nickel in laterite ores by physical separation methods**  
S. Farrokhpay and L. Filippov (Université de Lorraine, France)
- 15.15 Coffee, tea
- 16.00 **Feasibility of gravity and magnetic separation for Yxsjöberg historical tungsten ore tailings**  
J. Mulenshi, P. Khavari and J. Rosenkranz (Luleå University of Technology, Sweden)
- 16.15 **Recovery of niobium minerals from slimes by gravity and magnetic separation**  
R. Li, M.R. Lepage, O. Kokkiliç, K.E. Waters (McGill University, Canada) and N.A. Rowson (Master Magnets, UK)

- 16.30 **Investigation of magnetic separation of a pyrometallurgically pre-treated lateritic nickel ore**  
K.M. Hahn and H. Wotruba (RWTH Aachen University, Germany)
- 16.45 **Numerical modelling of heat assisted lamellar settling**  
C. Reyes (Advanced Mining Technology Center, Chile) and C. Ihle (Advanced Mining Technology Center and Universidad de Chile, Chile)
- 17.00 **A performance assessment study of high rate thickener at iron ore processing plant of Tata Steel Ltd. in Noamundi, Jharkhand (India) to improve recovery of process water**  
P. Chaudhary, V. Shukla and D.P. Chakraborty (Tata Steel Ltd, India)
- 17.15 **The lessons filtered dry stack tailings can learn from paste thickening**  
P. Ainsworth (Paterson & Cooke (UK) Ltd)
- 17.30 Closing remarks
- 17.35 Coffee and overview of Cornish Mining History
- 18.00 Coaches leave Maritime Museum for Wheal Peevor (accompanying guests welcome)