

Physical Separation '15



MINING



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(Twitter #PhysicalSeparation15).

Wednesday June 10th

16.30-18.00 Registration, wine and cheese reception. Accompanying partners welcome

Thursday June 11th

08.00 Registration opens. Coffee and light breakfast

09.00 **Welcome to Cornwall**
J. Wills (MEI, UK)

09.20 *Technical Session 1*
Chairman: K.E. Waters (McGill University, Canada) and C. Bazin (Laval University, Canada)

09.20 **Keynote Lecture: Reducing energy consumption in comminution by doing much less of it!**
R.D. Morrison (JKMRC, Australia)

10.00 **Water-free mineral processing**
J.-M. Bergmann (TOMRA Sorting GmbH, Germany)

10.20 **Bridging the gap: understanding the economic impact of ore sorting on a mineral processing circuit**
J. Lessard, W. Sweetser, J. Figueroa, L. McHugh (Orchard Material Technology, LLC, USA) and K. Bartram (Steinert Elektromagnetbau GmbH, Germany)

10.40 Coffee

11.20 **Development of novel method to visualise and assess preferential grade by size potential**
C. Carrasco, L. Keeney and S. Walters (Cooperative Research Centre for Optimising Resource Extraction, Australia)

11.40 **Economic advantages of dry triboelectric separation of minerals**
L. Baker, K.P. Flynn, F.J. Hrach, and S. Gasiorowski (ST Equipment & Technology LLC, USA)

12.00 **Triboelectrostatic separation of pulverized coal based on the combined mineralogical characterization analyses**
Yaquun He, Weining Xie, Hong Li, Linhan Ge, Hua Wei and Shuai Wang (China University of Mining & Technology, China)

12.20 **Electrostatic beneficiation of diatomaceous earth**
S. Moradi, D. Moseley, A. Coe, B. Prall, M. Baricot, P. Chauhan (IMERYYS Minerals Ltd, UK), F. Hrach and A. Gupta (Separation Technologies LLC, USA)

12.40 **The relation of temperature, microwave absorbing properties and thermo-dynamic behavior of selected hard rocks**
P. Hartlieb, M. Toifl and R. Meisels (Montanuniversitaet Leoben, Austria)

- 13.00 Lunch
- 14.00 *Technical Session 2*
Chairman: K. Hadler (Grinding Solutions, UK)
- 14.00 **Drakelands tungsten and tin process plant, UK**
C. Northfield (Wolf Minerals, UK)
- 14.20 **Development of the SII “Mission” mineral sands project**
P.L. Dunn (Mineral Technologies Inc, USA), R. Rose and D. Settles (Southern Ionics Inc., USA)
- 14.40 **Beneficiation of the Nechalacho rare earth deposit by gravity and magnetic separation**
A. Jordens, C. Marion, R. Langlois, K.E. Waters (McGill University, Canada), T. Grammatikopoulos (SGS Inc., Canada) and R.S. Sheridan (University of Birmingham, UK)
- 15.00 **Cryo-grinding of waste from electronic and electric equipment, implications for recovery of rare earth elements**
B.I. Pålsson, C. Wanhainen (Luleå University of Technology, Sweden), L. Yurramendi (TECNALIA, Spain), D. Guardie and A. Egia (Indumetal Recycling, S.A., Spain)
- 15.20 **VeRo-Liberator® - a new impact crusher with unparalleled performance**
G. Borg and F. Scharfe (PMS Hamburg, Germany)
- 15.40 **Model of banana screen for robust performance**
G. Asbjörnsson, M. Bengtsson, E. Hulthén and M. Evertsson (Chalmers University of Technology, Sweden)
- 16.00 Coffee
- 17.00 Optional Guided Coast Path Walk, ending with a beer at the Chain Locker Pub, Old Falmouth. Accompanying partners welcome

Friday June 12th

- 08.30 Coffee and light breakfast
- 09.00 *Technical Session 3*
Chairmen: B.I. Pålsson (Luleå University of Technology, Sweden) and G. Borg (PMS Hamburg, Germany)
- 09.00 **New methods for granular-material flow prediction and design of efficient industrial screen**
N. Rotich, R. Tuunila and M. Louhi-Kultanen (Lappeenranta University of Technology , Finland)
- 09.20 **An operational model for a spiral classifier**
C. Bazin, M. Sadeghi (Laval University, Canada) and M. Renaud (COREM, Canada)
- 09.40 **Velocity analysis of particles in a spiral concentrator by PEPT**
D. Boucher, Z. Deng, R. Langlois, K. Waters (McGill University, Canada) and T. Leadbeater (University of Birmingham, UK)
- 10.00 **CFD-DEM study of the multiphase flow in a dense medium cyclone: interaction of particle density and size distributions**
J. Chen, K. Chu, A.B. Yu (Monash University, Australia), A. Vince (Elsa Consulting Group, Australia). G.D. Barnett and P.J. Barnett (Minco Tech Pty Ltd, Australia)
- 10.20 Coffee

- 11.00 **Using mineralogical characterisation and process modelling to simulate the gravity recovery of ferrochrome fines**
C. Bergmann, V. Govender and A. Corfield (Mintek, South Africa)
- 11.20 **Size-by-size analysis of dry separation using a Knelson Concentrator**
M. Zhou, O. Kökkılıç, R. Langlois and K.E. Waters (McGill University, Canada)
- 11.40 **Selective flocculation in the beneficiation of diatomaceous earth: the dispersion process**
S. Moradi, D. Moseley, P. Chauhan, B. Prall, M. Baricot and A. Coe (IMERYS Minerals Ltd, UK)
- 12.00 **Processing secondary nuclear waste using gravity and magnetic separation**
M. Brandauer, S. Gentes (Karlsruhe Institute of Technology, Germany) and J. Starflinger (University of Stuttgart, Germany)
- 12.20 **Direct measurement of internal material flow in bench scale wet low-intensity magnetic separator**
J. Stener, J.E. Carlson, B. Pålsson and A. Sand (Luleå University of Technology, Sweden)
- 12.40 Lunch
- 14.00 *Technical Session 4*
Chairman: P. Hartlieb (Montanuniversität Leoben, Austria)
- 14.00 **Investigation of the performance of a low intensity magnetic separator using QEMSCAN analysis**
R.D. Pascoe, G. Rollinson and G. Davey (Camborne School of Mines, UK)
- 14.20 **Experimental study of efficient approach to fine particle separation using mechanical stirring by a fluctuating magnetic field**
K. Ishida (JFE Steel Corporation, Japan) and T. Pretz (RWTH Aachen University, Germany)
- 14.40 **Improved high sulfur fine coal microwave energy absorption performance and electromagnetic characteristics by magnetic media in the magnetic separation desulfurization**
Yuemin Zhao, Bo Zhang, Chenlong Duan, Zhenfu Luo, Jingfeng He and Liang Dong (China University of Mining & Technology, China)
- 15.00 **Dewatering of waste from acid leaching by utilizing the electro-osmotic potential**
M. Alvarez-Silva and, K.E. Waters (McGill University, Canada)
- 15.20 **Ultraflocculation reactors applied to dewatering of copper sulphides tailings**
F. Betancourt, F. Concha, M. Salazar and M. Silva (Universidad de Concepción, Chile)
- 15.40 Closing remarks and invitation to Physical Separation '17
A.J. Wills (MEI, UK)
- 15.50 Cornish cream tea and briefing on mine visit. Accompanying guests welcome
- 16.20 Coaches leave for visit to Camborne-Redruth historic mining area
Accompanying guests welcome

POSTERS

Mechanism of coarse coal slime separation in an inflatable tapered diameter separation bed
C. Duan, C. Sheng, Y. Zhao, J. He, Y. He and B. Zhang (China University of Mining and Technology, China)

Fine coal beneficiation by a pulsating air flow classifier
Ge Linhan, He Yaqun, Hou Hao, Xie Weining, Zhang Guangwen and Yang Xing (China University of Mining & Technology, China)

Improving the separation performance of Compound Dry Separator for coal cleaning by the optimization of operating parameters

Jingfeng He, Yuemin Zhao, Chenlong Duan, Zhenfu Luo, Yaqun He, Bo Zhang, Liang Dong, Enhui Zhou and Haishen Jiang (China University of Mining and Technology, China)

Mathematical modelling of a laboratory Denver jig

A.C. Silva, E.M.S. Silva and R.S. Tomáz (Federal University of Goiás, Brazil)

DEM simulation of banana screen performance

A. Davoodi, C.M. Evertsson, E. Hultén and M. Bengtson (Chalmers University of Technology, Sweden)

Measurement of solids concentration in hydrocyclone using ERT: validation against CFD

V.T. Reddy, V. Kowshik and N. Mangadoddy (Indian Institute of Technology, India)

Flowsheet development for the REE Lofdal Deposit located in Namibia

C. Da Corte (Mintek, South Africa)

Numerical study of near gravity material effect on dense medium cyclone performance

A.A. Kumari, V.T Reddy, M. Narasimha, R. Banerjee (Indian Institute of Technology, India), G.E. Sreedhar, R. Shivakumar and S.K. Sharma (National Mineral Development Corporation Limited, India)