

# Physical Separation '11

Sponsored by:



## Wednesday 22<sup>nd</sup> June

17.00-18.00 Registration, cheese and wine reception. Accompanying partners welcome.

## Thursday 23<sup>rd</sup> June

08.00 Registration desk opens

09.00 **Opening Remarks**  
J. Wills (MEI, UK)

09.10 *Technical Session 1*  
Chairmen: B.I. Pålsson (Luleå University of Technology, Sweden) and S.B. Kuang (University of New South Wales, Australia)

09.10 **Microwave separation of multiphase materials: application to concrete recycling**  
N. Lippiatt and F. Bourgeois (University of Toulouse, France)

09.30 **Investigation of effect of microwave energy on electrostatic separation of colemanite and ulexite**  
M.F. Eskibalçı and S.G. Ozkan (Istanbul University, Turkey)

09.50 **Damage of basalt induced by microwave irradiation**  
P. Hartlieb, M. Leindl and F. Kuchar (University of Leoben, Austria)

10.10 **Triboelectric separator for beneficiation of fine minerals**  
J.D. Bittner and S.A. Gasirowski (Separation Technologies, USA)

10.30 Coffee

11.10 **Preconcentration applied to a low grade iron ore deposit**  
S.A.A. França et al (Ferrous, Brazil)

11.30 **Sensor-based sorting - experience and opportunities at CommodasUltrasort**  
J.-M. Bergmann (CommodasUltrasort GmbH, Germany)

11.50 **Theory and operational experience of X-Ray-Transmission sorting in the minerals industry**  
C. Kleine, M. Robben and H. Wotruba (RWTH Aachen University, Germany)

12.10 **Rethinking electro-magnets for separation technologies: a materials, manufacturing and financial study**  
T. Greyvenstein (Magnetech, South Africa)

12.30 **Feasibility study on physical beneficiation of low-grade PGM flotation tailings by mechanical spirals and enhanced gravity separation**  
H. Kasaini and J. Siame (Tshwane University, South Africa)

12.50 Lunch

- 14.00 *Technical Session 2*  
Chairman: S.G. Ozkan (Istanbul University, Turkey)
- 14.00 **Gravity separation of a UG-2 ore secondary sample for the reduction of chromite minerals**  
L. Maharaj, B.K. Loveday and J. Pocock (University of KwaZulu-Natal, South Africa)
- 14.20 **Experimental study on the influence of critical process variables on the performance of a pilot scale decanter centrifuge**  
T. Kinnarinen, M.Louhi-Kultanen, A. Häkkinen (Lappeenranta University of Technology, Finland) and E. Meshcheryakov (Saint Petersburg State Technological University, Russia)
- 14.40 **Numerical study of gas-liquid-solid flow in classifying cyclones**  
S.B. Kuang, K.W. Chu, A.B. Yu (University of New South Wales, Australia) and A. Vince (Elsa Consulting Group Pty Ltd, Australia)
- 15.00 **Hydrocyclone classification in the  $\mu\text{m}$ -range**  
E. Endres, J. Dueck and Th. Neesse (German Friedrich-Alexander-Universität Erlangen-Nuremberg, Germany)
- 15.20 **Understanding the effect of solids concentration on hydrocyclone performance**  
A. Davailles, E. Climent and F. Bourgeois (Université de Toulouse, France)
- 15.40 **Dynamic features of hydrocyclone flow of relevance to separation**  
R. Wakelin (Northern Research Institute Narvik, Norway)
- 16.00 Coffee
- 17.00 Optional Guided Coast Path Walk, ending with a beer at the Chain Locker Pub, Old Falmouth

#### Friday 24<sup>th</sup> June

- 09.00 **Cornwall the birthplace of modern mining- introduction to the Camborne-Redruth tour**  
B.A. Wills (MEI, UK)  
(Accompanying partners welcome)
- 09.40 *Technical Session 3*  
Chairmen: F. Bourgeois (University of Toulouse, France) and C. Bazin (Laval University, Canada)
- 09.40 **Investigation of washing process for bauxite beneficiation**  
I. Ahmad, E.-U. Hartge, J. Werther, S. Heinrich (Hamburg University of Technology, Germany) and R. Wischnewski (Hydro Aluminium AS, Norway)
- 10.00 **Empirical study of a gravitational air classifier**  
R. Johansson and M. Evertsson (Chalmers University of Technology, Sweden)
- 10.20 **Fine screening with electrically heated screen decks**  
B.I. Pålsson (Luleå University of Technology, Sweden) and J. Bucht (LKAB, Sweden)
- 10.40 Coffee
- 11.20 **PC-based mathematical model for understanding and control of dense medium cyclones**  
J. Chen, K.W. Chu, R. Zou, A.B. Yu (University of New South Wales, Australia) and A. Vince (Elsa Consulting Group Pty Ltd, Australia)

- 11.40 **CFD-DEM study of the multiphase flow in a dense medium cyclone: the effect of vortex finder pressure**  
K.W. Chu, B. Wang, A.B. Yu (University of New South Wales, Australia) and A. Vince (Elsa Consulting Group Pty Ltd, Australia)
- 12.00 **Analysis and modelling of the operation of a hydraulic classifier for iron ore concentrate**  
C. Bazin (Laval University, Canada) and G.M. Payenzo (Arcelor Mittal Mines, Canada)
- 12.20 **Particle dynamics and stability study in air dense medium fluidized bed separator**  
A.K. Sahu, A. Tripathy and S.K. Biswal (Institute of Minerals and Materials Technology, India)
- 12.40 Closing Remarks  
A.J. Wills (MEI, UK)
- 12.50 Lunch
- 14.10 Visit to the historical Camborne-Redruth tin and copper mining district\*

## **POSTERS**

### **Consideration on purification of bentonite and loading citric acid for mango preservation**

Liu Kun, Li Xiang-wei, Wang Xue-ling and Xiang Shan-ping (Guangxi University, China)

### **Viga iron ore project filtration technology selection**

R.S. Behring et al (Ferrous, Brazil)

### **Numerical simulation of the particle flow and sieving behaviour on the sieve bend/low head screen combination**

K.J. Dong and A.B. Yu (University of New South Wales, Australia)

\* The tour includes a 2 mile walk. Delegates undertake the tour at their own risk, and MEI accepts no liability for any losses or injuries incurred.