Physical Separation ‘11

Sponsored by: 

Wednesday 22\textsuperscript{nd} June

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

Thursday 23\textsuperscript{rd} June

08.00 Registration desk opens

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

09.10 **Technical Session I**  
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. Eskibalcı 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. Gasiorowski (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. Kimmarinen, 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)

14.00  **Hydrocyclone classification in the µm-range**  
E. Endres, J. Dueck and Th. Neesse (German Friedrich-Alexander-Universität Erlangen-Nuremberg, Germany)

15.00  **Understanding the effect of solids concentration on hydrocyclone performance**  
A. Davailles, E. Climent and F. Bourgeois (Université de Toulouse, France)

15.20  **Dynamic features of hydrocyclone flow of relevance to separation**  
R. Wakelin (Northern Research Institute Narvik, Norway)

15.00  Coffee

17.00  Optional Guided Coast Path Walk, ending with a beer at the Chain Locker Pub, Old Falmouth

**Friday 24th 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)
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)

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)

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)

Closing Remarks
A.J. Wills (MEI, UK)

Lunch

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.