

Computational Modelling '08  
Provisional Timetable at 28th October- subject to change

Organised by:  
**MEI**

Sponsored by:   

**Wednesday 12<sup>th</sup> November**

16.30-18.00 Registration and wine

**Thursday 13<sup>th</sup> November**

08.00 Registration desk opens

08.40 Opening Remarks  
B.A. Wills (MEI, UK) and D.A. Deglon (University of Cape Town, South Africa)

09.00 *Technical Session 1*  
Chairmen: A.B. Yu (University of New South Wales, Australia) and D. de Kock (Qfinsoft (Pty) Ltd, South Africa)

09.00 **A technical overview of the newest modelling techniques available to the minerals industry**  
M. Slack (ANSYS UK Ltd, UK)

09.20 **Computational fluid dynamics as a tool in developing new processes for the base metal industry**  
J. Sjöström and M. Lundqvist (MEFOS, Sweden)

09.40 **CFD modelling of a circular electric smelting furnace in the platinum refining process**  
J.J. Bezuidenhout, J.J. Eksteen and S.M. Bradshaw (University of Stellenbosch, South Africa)

10.00 **DEM simulation of cake formation and growth in filtration**  
K.J. Dong et al (University of New South Wales, Australia) and G. Roach (Alcoa World Alumina, Australia)

10.20 Coffee

11.00 **CFD modelling of non-Newtonian flow in a mechanical flotation cell**  
C.W. Bakker, D. Deglon and C.J. Meyer (University of Cape Town, South Africa)

11.20 **Modelling heat transfer in the KK2 coal powder fired rotary kiln furnace at LKAB**  
M. Lundqvist, U. Sjöström (MEFOS, Sweden) and D. Marjavaara (LKAB, Sweden)

11.40 **Mathematical modelling study of fluid flow and mixing in full scale gas stirred ladles**  
S.W.P. Cloete, J.J. Eksteen and S.M. Bradshaw (University of Stellenbosch, South Africa)

12.00 **CFD study of the effects of medium properties on dense medium cyclone operation**  
B. Wang, K.-W. Chu, A.B. Yu (University of New South Wales, Australia) and A. Vince (Elsa Consulting Group, Australia)

12.20 **Effect of slurry flow on particle motion in IsaMill**  
C.T. Jayasundara, R.Y. Yang, B. Guo, A.B. Yu (University of New South Wales, Australia) and J. Rubenstein (Xstrata Technology, Australia)

12.40 Lunch

14.00 *Technical Session 2*  
Chairman: S. Brochot (Caspeo, France)

14.00 **CFD-DEM study of the effects of coal properties on the flow and performance of dense medium cyclones**  
K. Chu et al (University of New South Wales, Australia) and A. Vince (Elsa Consulting Group, Australia)

14.20 **Incorporating shape in DEM simulation**  
G. Morrison et al (DebTech, South Africa) and M. Price (Cogency CC, South Africa)

- 14.40 **Coupling EDEM with Easy5/ADAMS for dynamic particle-structure interaction**  
K.M. Ridgers (Esteq/VR Steel, South Africa)
- 15.00 **Application of a bonded particle model with the Discrete Element Method**  
S. Cole, R.D. LaRoche and J. Favier (DEM Solutions Ltd., UK)
- 15.20 **A multiphase model of the mineral density separator**  
N. Naude, A. Kolesnikov (University of Tshwane, South Africa) and L. Lorenzen (University of Stellenbosch, South Africa)
- 15.40 **An attempt to predict coal response to froth flotation based on group macerals and proximate analysis using regression and artificial neural networks**  
E. Jorjani et al (Islamic Azad University, Iran) and A. Sam et al (Shahid Bahonar University of Kerman, Iran)
- 16.00 Coffee

## Friday 14<sup>th</sup> November

- 09.00 *Technical Session 3*  
Chairmen: M. Thoresson (Esteq/VR Steel, South Africa) and M. Moys (Wits University, South Africa)
- 09.00 **Water minimisation at Skorpion Zinc – a systemic approach to process optimisation**  
H. Bhikha, A.E. Lewis and D.A. Deglon (University of Cape Town, South Africa)
- 09.20 **Momentum coupling in flotation**  
G.A. Wierink and K. Heiskanen (Helsinki University of Technology, Finland)
- 09.40 **Effect of turbulence models on prediction of fluid flow in an Outotec flotation cell**  
Jiliang Xia (Outotec Research Oy, Finland), A. Rinne, and S. Gronstrand (Outotec Oy, Finland)
- 10.00 **Simulation of particle flow on a multi-deck banana screen**  
K.J. Dong, A.B. Yu (University of New South Wales, Australia) and I. Brake (BHP Billiton-Mitsubishi Alliance, Australia)
- 10.20 Coffee
- 11.00 **Enhancement of classical hydrocyclone modelling using fine description of material**  
S. Brochot (Caspeo, France)
- 11.20 **Determination of binding energies of platinum ions on functionalized activated carbons through density functional theory**  
H. Kasaini, J. Mphahlele (Tshwane University of Technology, South Africa) and K. Bolton (Goteburg University, Sweden)
- 11.40 **Heat transfer during iron ore pellet induration – an experimental study and simulations**  
U. Sjöström, M. Lundqvist (MEFOS, Sweden) and D. Marjavaara (LKAB, Sweden)
- 12.00 **Tracking the motion of media particles inside an ISAmill using PEPT**  
A. van der Westhuizen, I. Govender, A. Mainza (University of Cape Town, South Africa) and J. Rubenstein (Xstrata Technologies, Australia)
- 12.20 **Adsorption-desorption and chemisorption**  
J.H.P. Watson (University of Southampton, UK)
- 12.40 Lunch
- 14.00 *Technical Session 4*  
Chairman: D. Deglon (University of Cape Town, South Africa)
- 14.00 **Thermodynamic modelling of the multiphase pyrometallurgical processing of electric arc furnace dust**  
C.A. Pickles (Queen's University, Canada)
- 14.20 **Mathematical modeling of the thermophilic bioleaching of chalcopyrite**  
J. Vilcáez and C. Inoue (Tohoku University, Japan)
- 14.40 **Experimental and numerical investigations of blast furnace burden distribution**  
C.K. Ho et al (University of New South Wales, Australia) and S.T. Tsai (China Steel Corporation, Taiwan)
- 15.00 **Phenomenological dynamic model for the hydrosizer**  
E. Crespo (Beralt Tin and Wolfram SA, Portugal)
- 15.20 **Effect of particle material properties on particle percolation in a packed bed**  
H.P. Zhu, M. Rahman and A.B. Yu (University of New South Wales, Australia)
- 15.40 Coffee