

Computational Modelling '17



(Twitter #ComputationalModelling17)

Monday June 12th

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

Tuesday June 13th

08.00 Registration opens. Coffee and light breakfast

09.00 **Opening Remarks**

J. Wills (MEI, UK)

09.20 *Technical Session 1*

Chairmen: P. Brito-Parada (Imperial College, UK) and L.A. Cisternas (Universidad de Antofagasta, Chile)

09.20 **Keynote Lecture: Modelling Multi-phase Minerals Processing Systems**

S. Neethling (Imperial College, UK)

09.50 **Decoupling the impact of rock properties and operational settings on minerals processing performance: a data-driven approach**

S. Suriadi, S.J.J. Leemans, K. Burrage, A. Hofstede, M.T. Wynn (Queensland University of Technology, Australia), C. Carrasco (BHP Billiton, Australia), L. Keeney and P. Walters (CRC ORE, Australia)

10.10 **Statistical considerations for the modelling of comminution processes in mining**

A. Hinde (Independent Consultant, South Africa)

10.30 Coffee

11.20 **What can we learn from single spherical particle breakage: a deeper look from test and numerical study**

H. Jiang, J. Sun and Y. D. Zhou (Tsinghua University, China)

11.40 **Numerical analysis of vertical stirred mills scale-up using discrete element method**

D.B. Mazzinghy, R.M. Carvalho, V.A. Rodriguez, L.M. Tavares, C.E. Teixeira Jr., R. Galéry, (Universidade Federal de Minas Gerais and Universidade Federal do Rio de Janeiro, Brazil)

12.00 **Attritor mill- grinding media dynamics**

D. Daraio, H.E. Stitt (Johnson Matthey Technology Centre, UK), M. Marigo, A. Alexiadis and A. Ingram (University of Birmingham, UK)

12.20 **Using DEM to add value to a laboratory stirred media mill test work program**

E. Ford and Q. Reynolds (Mintek, South Africa)

12.40 Lunch

14.00 *Technical Session 2*

Chairmen: G. Gustafsson (Luleå University of Technology, Sweden)

14.00 **Improving milling operation using uncertainty and global sensitivity analyses**

F. Lucay, L.A. Cisternas (Universidad de Antofagasta, Chile), E.D. Gálvez (Universidad Católica del Norte, Chile), M. Salez-Cruz (Universidad Autónoma Metropolitana, Mexico)

14.20 **A novel method for efficient modelling of interactions between pulp, charge and mill structure in tumbling mills**

P. Jonsén, S. Hammarberg, B.I. Pålsson and G. Lindkvist (Luleå University of Technology, Sweden)

- 14.40 **Experimental and numerical study of granular flow using particle methods: application in handling of potassium chloride**
S. Larsson, G. Gustafsson, H.-Å. Häggblad and P. Jonsén (Luleå University of Technology, Sweden)
- 15.00 **Numerical simulation of cation exchange in fine-coarse seawater slurry pipeline flow**
C. Reyes and C.F. Ihle (Universidad de Chile, Chile)
- 15.20 **Enhancement of collection of fine particles in a cyclone by ultrasonic nebulizer**
B. Wang, S. Li, R. Xin, Y. Zhang and C. Wang (Lanzhou University, China)
- 15.40 Coffee
- 16.45 Optional Guided Coast Path Walk, ending with a beer in Old Falmouth.
Accompanying partners welcome

Wednesday June 14th

- 08.15 Coffee and light breakfast
- 09.00 *Technical Session 3*
Chairmen: E. Ford (Mintek, South Africa) and D.B. Mazzinghy (Universidade Federal de Minas Gerais, Brazil)
- 09.00 **Discrete element modelling of vibrating screens**
A.A. Harzanagh, E.C. Orhan and S.L. Ergun (Hacettepe University, Turkey)
- 09.20 **A continuum based numerical modelling approach for the simulation of WHIMS**
R. Rasool and H. Lieberwirth (Institute of Mineral Processing Machines, Germany)
- 09.40 **Simplify modelling of particle magnetic induction field based on finite element analysis**
J. Ku (Fuzhou University, China)
- 10.00 **A review of flotation design methods based on computational optimization**
L.A. Cisternas, F. Lucay, R. Acosta (Universidad de Antofagasta, Chile) and E.D. Gálvez (Universidad Católica del Norte, Chile)
- 10.20 Coffee
- 11.00 **A three-dimensional numerical framework for the modelling of the pulp phase in froth flotation**
G. Bhutani, J.J. Cilliers and P.R. Brito-Parada (Imperial College, UK)
- 11.20 **Numerical prediction of fracture in iron ore pellets during handling and transportation**
G. Gustafsson, H.-Å. Häggblad, S. Larsson and P. Jonsén (Luleå University of Technology, Sweden)
- 11.40 **Advances in the modelling of pyrometallurgical processes**
C. A. Pickles (Queen's University, Canada)
- 12.00 **FEM modelling of the stress and strain behaviour of a DC smelting furnace lining**
A.H. Kotze, J.H. Zietsman and S. Kok (University of Pretoria, South Africa)
- 12.20 **MI-CFD modelling of parallel flow regenerative kiln**
N. Kandamby, T. Abbas, M. Akritopoulos (CINAR Ltd, UK) and Z.G. Habib (LHOIST Group, Belgium)
- 12.40 **A hybrid simulation methodology for rotary kilns including granular flow and heat transfer**
M.P. Schwarz, P.J. Witt (CSIRO Mineral Resources, Australia, M.Sinnott, and P.W. Cleary (CSIRO Data 61, Australia)
- 13.00 Lunch

- 14.00 *Technical Session 4*
Chairman: A. Hinde (Independent Consultant, South Africa)
- 14.00 **Development of hydrometallurgical reactor leaching with modeling and simulation: atmospheric direct leaching of zinc concentrates**
M. Lampinen (Lappeenranta University of Technology, Finland)
- 14.20 **Multiple species leaching simulator at the particle scale**
F. Reyes, D. Barker, Q. Lin and S.J. Neethling (Imperial College, UK)
- 14.40 **Simulation of a high-pressure base metal leaching operation, including control layers and abnormal event detection**
J.J. Strydom, J.J. Miskim, J.T. McCoy, L. Auret and C. Dorfling (Stellenbosch University, South Africa)
- 15.00 Closing remarks and invitation to Computational Modelling '19
A.J. Wills (MEI, UK)
- 15.10 Cornish cream tea