Monday November 6th

**Technical Session 1**

**Keynote Lecture: Mostly froth and bubble – a lifetime of flotation research**
G.J. Jameson (University of Newcastle, Australia)

**Metallurgical performance of the Concorde Cell™ at industrial scale**
N. Kupka, J. Suhonen, A. Yáñez and A. Rinne (Metso, Finland)

**The effect of operational changes on gas dispersion in Concorde Cell™**
B. Tunç, M. Duran, S. Nikolov, N. Kupka, R. Grau and A. Yáñez (Metso, Finland)

**Pilot and full-scale trial of the Reflux™ flotation cell in a copper concentrator**
E. Kasińska-Pilut, M. Czekajło (KGHM Polska Miedź, Poland), B. Dabrowski and L. Christodoulou (FLSmidth, USA)

**Identifying flow regime transition in a Reflux Flotation Cell™**
A. Zakari, R. Chowdhury, P. Ireland, G. Evans and S. Mitra (University of Newcastle, Australia)

**Investigating the impact of feed gangue concentration on flotation kinetics and recovery in the Reflux™ Flotation Cell**
S. Parkes, P. Wang and K.P. Galvin (University of Newcastle, Australia)

**A comparative study between Imhoflot and mechanical flotation cells**
E. Gungor (Maelgwyn Mineral Services Ltd, UK), E. Samet, D. Durunesil, B. Köse (ARGETEST, Turkey), D.H. Hoang (Maelgwyn Mineral Services Ltd, UK and Helmholtz-Institute Freiberg for Resource Technology, Germany) and A. Hassanzadeh (Maelgwyn Mineral Services Ltd, UK, and Norwegian University of Science and Technology, Norway)
Application of pneumatic Imhoflot™ G-Cell in recovering fine particles: a case study of KGHM copper ore

Bubble generation by a plunging jet in the column of a pressurised pneumatic flotation cell
T. Zürner, K. Ortmann (Helmholtz-Zentrum Dresden-Rossendorf, Germany) and K. Eckert (Helmholtz-Zentrum Dresden-Rossendorf & Technische Universität Dresden, Germany)

Multiphase fluid dynamics of the CoarseAir™ fluidised bed flotation cell – the largest PEPT experiment to date
D. mesa, S. Neethling, P.R. Brito-Parada (Imperial College, UK), T.K. Wheldon and D.M. Hampel (University of Birmingham, UK)

The bubble size produced in a pilot HydroFloat® Cell and its effects on flotation
K. Demir, A.J. Morrison, K. Runge (JKMRC, Australia), C. Evan (The University of Queensland, Australia) and J. Kohmuench (Eriez Manufacturing Company, USA)

Small-scale fluidised bed flotation device for ore amenability testing
I. Verster, B. Awatey, L. Forbes, A. Morrison, K. Runge (JKMRC, Australia) and M. Mankosa (Eriez Manufacturing Co., USA)

Technical Session 2

Comparing Forced-Air and Self-Aspirated mechanical flotation machines
S. Merrill, J. Bowden and D. Lelinski (FLSmidth Inc, USA)

The development and performance of the WEMCO II at pilot and industrial scales as compared with the traditional WEMCO
I. Coltrin, J. Bowden, T. Sok and D. Lelinski (FLSmidth Inc, USA)

Research on ultra-large flotation machine based on flotation kinetic region reconstruction
S. Zhengchang, S. Shuaixing, S. Weicheng, Y. Yue (BGR IMM Technology Group, China), H. Dengfeng and Z. Ming (BGR IMM Technology Group and The University of Science & Technology Beijing, China)

Improving flotation hydrodynamics to maximize nickel recovery from tailings
P. Wang, M. Yvon, S. Parkes and K.P. Galvin (University of Newcastle, Australia)

Spider Crowder upgrade: recent advancement in froth management journey
A. Jalili, G. Bermudez, C. Cardoso (Metso, Canada), M. Mendivil (Metso, Panama), O. Altun and H. del Aguila (FQM, Panama)

Sizing methodologies for non-conventional flotation cells
A. Bill and R. Chandramohan (Ausenco, Canada)
**Euler-Euler simulation of homogeneous gas-liquid flow in bubble columns**  
M. Draw (Helmholtz-Zentrum Dresden & Technical University Dresden, Germany) and R. Rzehak (Technical University Dresden, Germany)

**Development of ion flotation process for industrial applications**  
M.R. Benmansour, R. Benhida (Mohammed VI Polytechnic University, Morocco and Université Côte d'Azur, France), A. Etahiri, M. Makan and H. Mazouz (Mohammed VI Polytechnic University, Morocco)

**A new method for assessing coarse particle flotation performance**  
L. Crompton, M.T. Islam and K.P. Galvin (University of Newcastle, Australia)

**Do’s, don’ts and have to’s in the use of image analysis tools to record bubble size distributions in highly concentrated flotation applications**  
S. Maaß (SOPAT GmbH, Germany), J. Emmerich, R. Panckow (SOPAT GmbH and Technische Universität Berlin, Germany) and M. Kraume (Technische Universität Berlin, Germany)

**Exploratory research into the implementation and sorting performance of a new technology based on reverse collision flotation**  
H. Dengfeng (BGR IMM Technology Group and The University of Science & Technology Beijing, China), S. Shuaixing, H. Jiancheng, F. Xuesai, C. Feifei and Y. Yue (BGR IMM Technology Group, China)

**Neutron radiographic investigations on liquid and particle dynamics in a froth column**  
L. Knüpfer, K. Eckert, S. Heitkam (TU Dresden & Helmholtz-Zentrum Dresden-Rossendorf, Germany), T. Lappan (Helmholtz-Zentrum Dresden-Rossendorf, Germany) and P. Trtik (Paul Scherrer Institut, Switzerland)

**Tuesday November 7th**

**Technical Session 3**

**Keynote Lecture: A probabilistic approach to understanding particle collection in flotation**  
G. Dobby and D. Hatton (Woodgrove Technologies Inc., Canada)

**A degenerating convection-diffusion model of a flotation column: theory, numerics and applications**  
F. Betancourt, R. Bürger (Universidad de Concepción, Chile), S. Diehl (Lund University, Sweden), M. del Carmen Martí (Universitat de València, Spain) and Y. Vásquez (Universidad Tecnológica de Panamá, Panamá)

**Modelling flotation cells using smoothed particle hydrodynamics (SPH)**  
S.J. Neethling, D. Mesa and P.R. Brito-Parada (Imperial College, UK)
Studying the effect of hydrodynamics on flotation kinetics of complex particles using particle-based separation modelling
A. Hassan (Helmholtz Institute Freiberg for Resource Technology, Germany, FLSmidth A/S, Denmark and Dresden University of Technology, Germany), M. Gurdziel, B. Guy, M. Rudolph, L. Pereira (Helmholtz Institute Freiberg for Resource Technology, Germany) and J. Bowden (FLSmidth, Inc, USA)

CatBoost-SHAP for modeling industrial operational flotation variables - a “conscious lab” approach
S.C. Chelgani (Luleå University of Technology, Sweden), A. Homafar (Semnan University, Iran), H. Nasiri (Amirkabir University of Technology, Iran) and M.R. laksar (Delijan Copper Flotation Company, Iran)

Economic model predictive control for a rougher flotation cell – a physics-based model approach
P. Quintanilla, S.J. Neethling, P.R. Brito-Parada (Imperial College, UK) and D. Navia (Universidad Técnica Federico Santa María, Chile)

The use of stretched exponentials to characterize flotation kinetics
L. Vinnett (Universidad Técnica Federico Santa María, Chile) and K.E. Waters (McGill University, Canada)

Convolutional neural networks applied to quantify the process behaviour of complex individual particles in froth flotation
L. Pereira, F. Ballani, M. Frenzel, K.G. van den Boogaart, R. Tołosana-Delgado (Helmholtz Institute Freiberg for Resource Technology, Germany), S. Án Avalos, T. Li and J. Ortiz (Queen’s University, Canada)

A new analytical model for particle-bubble collision in flotation processes
M. Kreuseler and B. Tiedemann (Technische Universität Dresden, Germany)

Ion flotation kinetic prediction using a new empirical model
M. Safari (Mintek, South Africa), F.S. Hoseinian and B. Rezai (Amirkabir University, Iran)

Dynamics of particle attachment in a model stirred cell: a new technique to characterize and quantify particle floatability
M. Eftekhari, K. Schwarzenberger and K. Eckert (Helmholtz-Zentrum Dresden-Rossendorf & Technische Universität Dresden, Germany)

The use of simple analytical techniques to assess surface oxidation of sulphide ores
K. Corin, A. Sibiya, R. Manenzhe (University of Cape Town, South Africa) and M. Tadie (Stellenbosch University, South Africa)
Investigating the adhesion of sphalerite to air bubbles for suppressing sphalerite during the flotation of zinc-containing copper ore

Technical Session 4

Surface chemistry and flotation of Au containing pyrites with different textures
S. Ozcelik and Z. Ekmekçi (Hacettepe University, Turkey)

A novel submersible multivariable sensor for the supervision, control, and optimization of flotation systems
M. Maldonado, I. Ramos, J. Martínez and A. Artigas (Universidad de Chile, Chile)

Using artificial intelligence to classify flotation froth conditions
B. Williams, D.J. Oosthuizen (Process IQ, Australia)

Analysis of froth flotation velocity from Anglo American Minas-Rio according to the ore in the plant feed and the benefits of its measurement
T.M.C. Frade (Anglo American Iron Ore, Brazil and UFMG, Brazil), A.B. Henriques (UFMG, Brazil) and L.C. de Rennó Machado (Anglo American Iron Ore, Brazil)

Flotation bank optimization through online gas holdup measurement on self-aerated cells
N. Miranda (SCM Minera Lumina Copper, University of Santiago and Santa Maria University, Chile), F. Alcorta (SCM Minera Lumina Copper, Chile), M. Maldonado (University of Santiago, Chile) and J. Yianatos (Santa Maria University, Chile)

Image classification model for pulping froth state detection: an industrial application
A. Coetzee, A.L. Haasbroek, L. Auret (Stone Three, South Africa) and M.M. Molomo (Mogalakwena Platinum Mine, South Africa)

Analysis of froth structure and flotation performance in different types of flotation cells
E. Guney and O. Bicak (Hacettepe University, Turkey)

A multi-sensor approach to measuring hydrodynamic parameters in a pyrite-quartz flotation system
H. Pervez (Technische Universität Dresden, Germany), A.-E. Sommer, T. Zürner (Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany) and K. Eckert (Technische Universität Dresden & Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany)

Digital twinning of flotation processes: a business case and potential challenges
S. Geldenhuys (University of Cape Town, South Africa) and L. Auret (Stone Three, South Africa)
Wednesday November 8th

Technical Session 5

Keynote Lecture: On the sustainable design of polymetallic flotation circuits
Y.L. Botero, L.A. Cisternas and Y. Flores (Universidad de Antofagasta, Chile)

Comparison of circuits over time in Canadian practice
J.A. Finch and Y.H. Tan (McGill University, Canada)

Effect of particle size and liberation on the mineral collection rate of industrial cells
P. Vallejos and J. Yianatos (Universidad Técnica Federico Santa María, Chile)

Climate-induced variation in electrochemical behavior of low-grade Cu-Ni-PGM ore
D. Kasymova (Metso & Aalto University, Finland), E. Saari, K. Heiskanen (Metso, Finland), and B. Musuku (Aalto University & Boliden Kevitsa, Finland)

Where chemistry and mineralogy meet during PGE and BMS flotation
N.J. Shackleton, V. Malysiak, E.H.W. Theron (Sasolburg Operations, South Africa) and P.F. Dicks (AECI Mining Chemicals, South Africa)

Flowsheet development for and commissioning of the Kamoa-Kakula Project
N.O. Lotter (Flowsheets Metallurgical Consulting Inc, Canada), E. Whiteman (Glencore XPS Business Unit, Canada), M.C. Hoffman (Maximum Process Solutions Inc. Canada), V. Nkuna (Ivanhoe Mines Ltd, South Africa), S.R. Amos (Kamoa Services (Pty) Ltd, South Africa) and A. Groenewald (DRA, South Africa)

A stepwise study on the characterisation and processing of South African platinum group tailings
K. Corin, R. Manenzhe (University of Cape Town, South Africa) and M. Tadie (Stellenbosch University, South Africa)

Using the desulfurization process by flotation for acid mine drainage prevention of a porphyry copper waste rock
Y.L. Botero (Universidad de Antofagasta, Chile and UQAT, Canada), A.Céspedes, L.A. Cisternas (Universidad de Antofagasta, Chile) and I. Demers (UQAT, Canada)

The introduction of a graphite flotation step in the patent pending Aurubis Hydrometallurgical flowsheet used for recycling of Li ion battery Black Mass
R. Rahbani, A. Harris and L. Bryson (Aurubis AG, Germany)

A characterization study on lithium-ion battery active materials flotation products using microscopic and tomographic techniques
T. Rinne, R. Serna-Guerrero (Aalto University, Finland) and J. Kuva (Geological Survey of Finland, Finland)
Mineralogical study of rare earth elements bearing minerals to develop a selective flotation process
E. Akyildiz, C.M. Silva, K. Tobiczky, S. Lode, K. Aasly, P.B. Kowalczuk (Norwegian University of Science and Technology, Norway) and Trond Watne (Rare Earths Norway AS, Norway)

Increasing copper and gold recoveries by fines agglomeration technology
R. Peacock, S. Vuppuluri, C. Rabanal, G. Sydykov, M. Nigmetov, I. Sandybekova (KAZ Minerals Bozshakol LLP, Kazakhstan) and B. Lumsden (Ausmetec Pty Ltd, Australia)

Technical Session 6

Flowsheet development for the selective flotation of lepidolite from the Beauvoir granite: mineralogical insights
C. Korbel, B. Demeusy, Z. Kahou, I. Filippova, L. Filippov (Université de Lorraine, France) and Q. Dehaine (Geological Survey of Finland, Finland)

Quantifying the distribution of different pyrrhotite types in copper-gold ore flotation using synchrotron X-ray diffraction
A. Rezvani, Y. Peng (University of Queensland, Australia), R. Fan (CSIRO Mineral Resources, Australia) and R. Kappes (Newmont Corporation, USA)

Revealing the process mineralogy of sub-microscopic gold-bearing refractory sulphides: Joint interpretation by SEM-based automated mineralogy and machine learning
M. Sinche-Gonzalez (University of Oulu, Finland) and R. Mollehuara-Canales (University of Oulu, Finland and Waten Sustainable Technologies, Peru)

Evaluation of the flotation process for producing a DRI pellet feed from a Canadian low-grade iron ore
J. Mesquita (ArcelorMittal Global R&D & Université de Lorraine, France), E. Kleiderer, S. Leslie, H. Turrer (ArcelorMittal Global R&D, France), M. Badawi and Y. Foucaud (Université de Lorraine, France)

The use of HydroFloat coarse particle flotation in Quebec Iron Ore’s Bloom Lake low silica upgrade circuit
A. Hobert, E. Dohm (Eriez Flotation, USA), F. Lavoie (Quebec Iron Ore, Canada) and C. Pelletier (BBA, Canada)

The effect of etheramine type on the hydrophobicity of quartz particles from iron ore
W.J. Rodrigues (Clariant, Chile), P. A. Fernandes (Clariant, Brazil) and A.E.C. Peres (University Federal Minas Gerais, Brazil)

Upscaling and optimization of reagents systems in froth flotation: a DOE and numerical-optimization-based methodology
B. Ben-Said, M. Rudolph and L. Pereira (Helmholtz Institute Freiberg for Resource Technology, Germany)
Baseline effects of milling media and water composition on slurry chemistry
S.N. Nyoni, K.C. Corin and C.T. O’Connor (University of Cape Town, South Africa)

Quantitative evaluation of collector flotation performance: the creation of a flotation index based on mineral recovery
W. Zhang, J. Cao, X. Jin, W. Sun, R. Zheng, Z. Gao (Central South University, China), J. Ralston (University of South Australia, Australia) and Z. Feng (University of California, USA)

Peptide-base collectors for the flotation of sulphide minerals
M. Alvarez-Silva, B. Levasseur (Corem, Canada), B. Mejía-Bohórquez and A. Granier (Université Laval, Canada)

The changed behaviour of xanthate in saline water
M. Hwang, Y. Mu, L. Cao and Y. Peng (The University of Queensland, Australia)

Switchable frother technology for improving cleaner circuit performance
T. Bhambhani, F. Zeng, E. Arinaîtwe (Solvay Mineral Processing Research and Innovation, USA), G. Alanis and A. Santana (Solvay North America Mineral Processing Sales, USA)

Evaluation of biosurfactants as frothers in froth flotation
R. Silva, C. Monyake, G. Knesel and J. Cervantes (Locus Mining, USA)

Effect of surfactants on rising dynamics of coarse particle-laden bubbles in turbulent flows
S.M.M. Mohan, Z. Peng, and E. Doroodchi (University of Newcastle, Australia)

Thursday November 9th

Technical Session 7

Keynote Lecture: Managing the people asset
D. Drinkwater (Metcelerate, Australia)

Analysis of dispersant efficacy in overcoming challenges posed by alteration minerals in flotation
B. McFadzean, M. Becker, S. Geldenhuys, A. Molifie, E. Nyaruwata and T. Tshinavhe (University of Cape Town, South Africa)

Synergism of mixed collectors in flotation of copper ore in Reflux Flotation Cell
M.K. Guner, K. Aasly, S. Lode, P.B. Kowalczuk (Norwegian University of Science and Technology, Norway) and T. Bhambhani (Solvay Mining Solutions, USA)

Depression of sphalerite in flotation of copper ores based on estimation of the degree of copper activation of sphalerite
K. Aikawa, N. Orii, I. Park, N. Hiroyoshi, M. Ito (Hokkaido University, Japan) and T. Sakakibara (Japan Organization for Metals and Energy Security, Japan)
The effectiveness of polysaccharide pyrite depressants in Cu flotation
A. Lewis (Nalco Water, Australia) and N. Mhonde (Nalco Water, South Africa)

Evaluation of the use of polymeric nanoparticles as a collector of chalcopyrite in the presence of clays
N. Merino, R. Murga, J. Amalraj (Universidad de Talca, Chile), L. Gutierrez (Universidad de Concepción, Chile) and L. Uribe (Universities of Talca and Concepción, Chile)

Molybdenite flotation in the presence of polyacrylamides: effect of polymer mechanical degradation and anionocity
L. Gutierrez, L. Echeverry and D. Estrada (University of Concepcion, Chile)

Microencapsulation-based surface modification for improving flotation separation of Cu-Zn mixed sulfide minerals
I. Park, D. Uchida, K. Aikawa, N. Hiroyoshi, M. Ito (Hokkaido University, Japan) and S. Jeon (Akita University, Japan)

The role of depressant and pH in the selective flotation of copper and zinc ore and insights from mineralogy
R.S. Magwaneng, T. Ono (Japan Organization for Metals and Energy Security (JOGMEC) & Akita University, Japan), K. Sunada, T. Takahashi, T. Sakakibara, Taro Kamiya (JOGMEC, Japan), K. Aikawa, I. Park, M. Ito (Hokkaido University, Japan), L.L. Godirilwe, J. Sanghee, K. Haga, A. Shibayama (Akita University, Japan), K. Mitsuhashi and H. Matsuoka (Nittetsu Mining Co. Ltd, Japan)

Synthesized bisphosphonates as non-toxic collectors in the flotation of massive Cu-Zn-Fe sulphide ore
S. Hartikainen (University of Oulu and University of Eastern Finland, Finland), N. Paasovaara (University of Oulu and South Eastern Finland University of Applied Sciences, Finland), M. Peltoniemi (Anglo American, Finland), J. Vepsäläinen, S. Peräniemi (University of Eastern Finland, Finland) and S. Yang (University of Oulu, Finland)

Froth flotation study of Pb-Zn ore under different temperature constraints
D. Pashkevich, A. Duggal, O. Kökkiliç, K.E. Waters (McGill University, Canada) and L. Pereira (Helmholtz Institute Freiberg for Resource Technology, Germany)

Depressing high-concentration pyrite in copper flotation
R.L.J. Lee and Y. Peng (University of Queensland, Australia)

Technical Session 8

Separation of arsenic minerals in flotation using a novel peptide collector
L.I. Ku (JKMRC, Australia), L. Forbes, S.B. e Abreu (JKMRC & ARC Centre of Excellence on Eco-Efficient Beneficiation of Minerals, Australia)
Selective flotation of arsenic bearing copper sulfide minerals from non-arsenic copper sulfide minerals to use a new collector reagent

Investigating the effect of pH on adsorption behavior of xanthate, dithiocarbamate and s-triazine collectors on sperrylite mineral using computational and experimental techniques
B. Nemutudi, P.P. Mkhonto, P.E. Ngoepe (University of Limpopo, South Africa), S. Pikinini, B. McFadzean (University of Cape Town, South Africa) and X. Zhang (BGRIMM Group, China)

PGM flotation using Clariant’s specialty chemicals
L. Mahlangu, G. Zwane and S. Raju (Clariant Southern Africa, South Africa)

An investigation into the effect of Eh and pH on the adsorption of a xanthate collector on sperrylite (PtAs2): a surface and solution characterization study
A. Wali, C.T. O’Connor and B. McFadzean (University of Cape Town, South Africa), L. Filippov and A. Elsorogy (Université de Lorraine, France)

Exploiting tailored carboxymethyl cellulose depressant for managing carbon recovery in refractory gold ore flotation
J.M Wallenius and F.L Bernardis (Nouryon Chemicals Finland Oy, Finland)

The investigation of ionic liquids as collectors for flotation of monazite, xenotime, and zircon: effects of cationic and anionic moieties
P. Julapong (Chulalongkorn University & Prince of Songkla University, Thailand), K. Aikawa, I. Park and M. Ito (Hokkaido University, Japan), C.B. Tabelin (Prince of Songkla University, Thailand & MSU–Iligan Institute of Technology, Philippines), T. Phengsaart and At Numprasanthai (Chulalongkorn University, Thailand)

Gallium recovery by ion flotation using amphiphilic siderophores as a novel flotation reagent
M. Chakankar, K. Pollmann, S. Kutschke and M. Rudolph (Helmholtz Institute Freiberg for Resource Technology, Germany)

Evaluation of the bio-based Cyrene™ as a sustainable pre-treatment solvent for the effective froth flotation-based separation of fine valuables from spent Lithium-ion batteries
A.M. Salces, M. Rudolph, A. Vanderbruggen (Helmholtz Institute Freiberg for Resource Technology, Germany), M.S. Henderson and J. Eksteen (Curtin University, Australia)

Unravelling the interaction between amine collectors and kaolinite through adsorption isotherms and molecular modelling
J. Lainé (ArcelorMittal Global R&D, France and Université de Lorraine, France), Y. Foucaud (Georesources, Université de Lorraine, France), H. Turrer (ArcelorMittal Global R&D, France) and M. Badawi (LPCT, Université de Lorraine, France)
Performance monitoring and control of iron ore flotation integrating operational variables and froth image analysis properties
T. Nunes (Vale SA & Federal University of Minas Gerais, Brazil), C. Costa, N. Lima (Vale SA, Brazil), T. Euzébio (Helmholtz-Zentrum Dresden-Rossendorf, Germany) and A. Peres (Federal University of Minas Gerais, Brazil)

The use of Zeta Potential in froth flotation – a review
L.L. October, M.S. Manono and K.C. Corin (University of Cape Town, South Africa)

The effect of recycle water quality on the flotation of a Platreef ore
Z.P. Peku, K.C. Corin (University of Cape Town, South Africa), J. Taguta (Natural Resources Research Institute, USA) and M. Diame (Mintek, South Africa)

Effect of turbulence on particle detachment from a bubble-particle aggregate within a confined vortex
M.M. Hoque, S. Mitra and G. Evans (University of Newcastle, Australia)

Evaluation of recycled vegetable oil and organic biosolids as collectors in micro-flotation tests
C. Moraga, L. Uribe, C. Rodríguez, M. P-C. Soriano and S.H. Araghi (Universidad de Talca, Chile)

Mobile pilot plant froth flotation – lessons learned
R. Jolsterå, E. Öberg, K. Taavoniku and T. Wennberg (LKAB, Sweden)

Development of an online xanthate measurement for PGMs and Base Metals in flotation cells
T. Phadi, Z. Sehume and Z. Magaxeni (Mintek, South Africa)

Evaluation of the Crago flotation process to recover the iron contained in the fine tailings of Mont-Wright mine
J. Mesquita (ArcelorMittal Global R&D & Université de Lorraine, France), M. Dieu, H. Turrer, M. Badawi and Y. Foucaud (Université de Lorraine, France)

Development of high-performance collectors by real data-driven machine learning
W. Zhang, R. Zheng, W. Sun, Z. Gao (Central South University, China) and Z. Feng (University of California, USA)

Investigating the impact of varying ore feed grade on entrainment, froth stability and flotation performance under varying water qualities
M. Nkadimeng, M.S. Manono and K.C. Corin (University of Cape Town, South Africa)

Machine leaning forcefields for an unprecedented description of mineral-water interfaces
M. Badawi, D. Dell’Angelo, H. Said (Université de Lorraine, France), J. Lainé (Université de Lorraine, France & ArcelorMittal Global R&D, France) and Y. Foucaud (GeoResources, France)
A fundamental study on flotation and gravity separation of cobalt-rich ferromanganese crusts
T. Takahashi (Japan Organization for Metals and Energy Security, Japan)

Flotation testwork on seafloor polymetallic sulfide ores
Y. Tanaka (Japan Organization for Metals and Energy Security, Japan)

High purity quartz from flotation of iron ore tailings
N. Lima, G. Lopes, L. Resende (Vale SA, Brazil) and L. Faustino (Clariant Solutions, Brazil)

The effect of mineral composition on the oxidation behaviour and surface reactivity of pyrite with flotation reagents
L. Babedi, M. Tadie, B.P. von der Heyden (Stellenbosch University, South Africa) and D.A. Chareev (Institute of Experimental Mineralogy RAS, Russia)

How to quantify dewettingability? Challenges and approaches in linking surface characterization of wettability parameters to froth flotation by means of fundamental modelling
G. Öktem (Technische Universität Dresden & Helmholtz Institute Freiberg, Germany), L. Sun (China University of Mining and Technology, China & Helmholtz Institute Freiberg, Germany), F. Strube, K.G. van den Boogaart and M. Rudolph (Helmholtz Institute Freiberg, Germany)

Kinetic studies on fluorspar flotation in a single bubble flotation column
N. Reinartz, J. Görgen (Niederrhein University of Applied Sciences & University of Duisburg-Essen, Germany), M. Ulbricht (University of Duisburg-Essen, Germany) and G. Krekel (Niederrhein University of Applied Sciences, Germany)

Effect of CO2 on low-grade PGM and base metal ore flotation
D. Biswas and S. Luukkanen (University of Oulu, Finland)

Derivatives of MBT, MBO and MBI collectors and their adsorption-recovery behaviour on pyrite mineral: computational and microflotation studies
P.P. Mkhonto, P.E. Ngoepe (University of Limpopo, South Africa), X. Zhang (BGRIMM Technology Group & Qingdao University of Science & Technology, China), B. McFadzean, J. Taguta (University of Cape Town, South Africa), Y. Zhu and L. Han (BGRIMM Technology Group, China)

Toward a standardized framework for tracking water quality
R. Dixon (Metso, Spain)

Numerical investigation of two-phase flow characteristics in Imhoflot G-06 pneumatic flotation cell
H.A. Gorouh, M. Salmanzadeh (Shahid Bahonar University of Kerman, Iran), A. Hassanzadeh (Maelgwyn Mineral Services Ltd, UK and Norwegian University of Science and Technology, Norway) and M. Karimi (Alfa Laval Technologies AB, Sweden)
Colouring impurities removal and feldspar flotation using pneumatic Imhoflot™ H-Cell
D.H. Hoang (Maelgwyn Mineral Services Ltd, UK & Helmholtz-Institute Freiberg for Resource Technology, Germany), S. Huber (Amberger Kaolinwerke, Germany), R. Imhof (Maelgwyn Mineral Services Ltd, UK) and M. Rudolph (Helmholtz-Institute Freiberg for Resource Technology, Germany)

An open-source laboratory assistant tailored for flotation test work
L. Pereira, B.B. Said, A. Hassan, F. Rau, D. Hoang and M. Rudolph (Helmholtz Institute Freiberg for Resource Technology, Germany)

Synergistic foaming systems based on surface-modified magnetic nanoparticles and aminoacid surfactants in destabilization of real foams in a magnetic field
M. Borkowski, J. Zawala, G. Gochev (Polish Academy of Sciences, Poland), D. Lupa, P. Kustrowski (Jagiellonian University, Poland), B. Braunschweig (Münster University, Germany), O. Demchuk (The John Paul II Catholic University of Lublin, Poland) and P.B. Kowalczuk (Norwegian University of Science and Technology, Norway)

The FlotSim Project – leveraging multiphase flow and physical chemistry to engineer the next generation of flotation processes
K. Eckert (Technische Universität Dresden & Helmholtz-Zentrum Dresden-Rossendorf, Germany), M. Rudolph (Helmholtz Institute Freiberg for Resource Technology, Germany), R. Rzehak (Helmholtz-Zentrum Dresden-Rossendorf, Germany), J. Fröhlich (Technische Universität Dresden, Germany), C. Macomber and J. Bowden (FLSmidth Inc, USA)

FlotSim Binary Campaign – a comprehensive test work to collect data for studying froth flotation as a whole
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Flotation of seafloor massive sulphides from the Arctic Mid-Ocean Ridge
P.B. Kowalczuk, V. Slabov and K. Aasly (Norwegian University of Science and Technology, Norway)

Bubble Analyser – An open-source software for bubble size measurement using image analysis
D. Mesa, P. Quintanilla (Imperial College, UK), L. Vinnett (Universidad Técnica Federico Santa María, Chile) and F. Reyes (Imperial College, UK & IntelliSense.io, Australia)
Validation of Drift Flux model in Reflux flotation cell using the Wire-Mesh sensor
V. Tholan, Kerstin Eckert (Helmholtz-Zentrum Dresden-Rossendorf & Technische Universität Dresden, Germany), A.-E. Sommer (Helmholtz-Zentrum Dresden-Rossendorf, Germany), S. Heitkam (Technische Universität Dresden, Germany) and M. Rudolph (Helmholtz Institute Freiberg for Resource Technology)

Evaluation of fine particle flotation for a Merensky ore
N. Duma, D. Deglon, B. McFadzean and S. Geldenhuys (University of Cape Town, South Africa)

A comparison between the floatability of sperrylite and selected minerals
S. Pikinini (Mintek, South Africa), B. McFadzean C.T. O’ Connor (University of Cape Town, South Africa)

Life Cycle Assessment in mineral processing – a review of the role of flotation
B. Marmiroli, L. Rigamonti (Politecnico Di Milano, Italy) and P.R. Brito-Parada (Imperial College, UK)

X-ray computerised tomography (CT) measurements of the internal structures of flotation pulps
K. Cole, R. Perin, S. Peterson, J. Shock, S. Thornhill, T.M. Mojalefa, M. van Heerden (University of Cape Town, South Africa), C. Trauernicht, R. van Reenen (University of Stellenbosch, South Africa), P. Brito-Parada and D. Mesa (Imperial College, UK)

Improving turbulence measurements in flotation cells with high frequency positron emission particle tracking (PEPT)
R. Perin, M. van Heerden, S. Peterson, J. Shock, K. Cole (University of Cape Town, South Africa), D. Mesa and P. Brito-Parada (Imperial College, UK)

Development of novel flotation approach for the selective magnesite/dolomite flotation: use of the combination of anionic and nonionic molecules to enhance the fine particle flotation
I.V. Filippova and L.O. Filippov (Université de Lorraine, France)

Investigating the effect of multiple particle properties on the separation of ultrafine particles via froth flotation by means of MLA and multivariate tromp maps
J. Sygusch and M. Rudolph (Helmholtz Institute Freiberg for Resource Technology, Germany)

A study on the effect of pulp densities on the apatite flotation of iron ore with the REFLUX™ Flotation Cell
S. Saquran, M. Rudolph (Helmholtz Institute Freiberg for Resource Technology, Germany), V. Tholan, S. Heitkam and K. Eckert (Helmholtz-Zentrum Dresden-Rossendorf & Technical University Dresden, Germany)

An investigation on recovering iron oxides from an H₂-reduced bauxite residue using flocculation-flotation
A. Hassanzadeh and P.B. Kowalczuk (Norwegian University of Science and Technology, Norway)
Characterization and modelling of froth recovery along industrial flotation banks
J. Yianatos, P. Vallejos (Universidad Técnica Federico Santa María, Valparaíso, Chile), R. Grau and A. Yañez (Metso, Finland)

Use of dispersants for the flotation of gold minerals from a porphyry copper deposit
A. Ramírez-Madrid, L. Gutiérrez and C. Quintana and L. Echeverry (Universidad de Concepción, Chile)

Foaming properties of Yarrowia lipolytica yeast proteins as new types of biosurfactants
A. Bartusiak, B. Wasik, A. Kancelista, Z. Lazar (Wroclaw University of Environmental and Life Sciences, Poland) and P.B. Kowalczuk (Norwegian University of Science and Technology, Norway)

Improving representability of top-of-froth velocity measurements
Z.C. Horn and A. Coetzee (Stone Three Digital, South Africa)

Correlating froth stability to froth recovery in a laboratory-scale flotation device
N. Buthelezi, B. McFadzean and S. Geldenhuys (University of Cape Town, South Africa)

Replacing foaming amine collectors during hematite and quartz reverse flotation separation
W. Chimonyo and Y. Peng (The University of Queensland, Australia)

An experimental validation of a 1D model for column flotation
F. Betancourt, R. Bürger, L. Gutiérrez (Universidad de Concepción, Chile), S. Diehl (Lund University, Sweden), M. del Carmen Martí (Universitat de València, Spain) and Y. Vásquez (Universidad Tecnológica de Panamá, Panamá)

Considering the action of polyhydroxyalkylene dimethyl ammonium chloride and acrylamide acrylate copolymer as residual dewatering agents in process water
M.S. Manono, S. Khan, K.C. Corin and L.O. October (University of Cape Town, South Africa)

Nanoparticle depressants - the effect of colloidal silica in the froth flotation of semi-soluble salt type minerals
B. Ben-Said, M. Rudolph and L. Pereira (Helmholtz Institute Freiberg for Resource Technology, Germany)

Optimisation of UG2 PGMs froth flotation process using metaheuristic algorithms coupled with artificial neural networks
N.G. Zulu and B.M. Thethwayo (University of Johannesburg, South Africa)

Selective recovery of scheelite from an archetypal tungsten skarn using amine and fatty-acid flotation
M. Auch-Roy, C. Korbel, F. Diot and Y. Foucaud (Université de Lorraine, France)
Novel application of pneumatic flotation cell for efficient graphite recovery from black mass: advancing critical raw material recycling
A. Vanderbruggen (Université de Lorraine, France), A. Salces, A.J.R. Medina (Helmholtz-Institute Freiberg for Resource Technology, Germany) and D.H. Hoang (Helmholtz-Institute Freiberg for Resource Technology, Germany & Maelgwyn Mineral Services Ltd, UK)

Decarbonization of operative flotation cells
G. Bermudez, A. Jalili (Metso, Canada), C. Cardoso (Metso, Chile) and M. Gallimore (Metso, USA)

Exploring the recovery of active particles from LiFePO4 batteries by froth flotation
T. Rinne and R. Serna-Guerrero (Aalto University, Finland)

Ultrasound and chemical assisted particles dispersion to process iron ore slimes
L.O. Filippov, I.V. Filippova, A. Sklier, J. D Souza (Université de Lorraine, France) and M.L.S. Marques (Université de Lorraine, France & VALE SA, Brazil)

Effect of rhamnolipid biosurfactant on flotation efficiency of Firozabad Sormeh lead sulfide ore
B. Nazari, H. Khoshdast, V. Shojaei (Shahid Bahonar University of Kerman, Iran), M. Safari (Mintek, South Africa) and A. Hassanzadeh (Maelgwyn Mineral Services Ltd, UK & Norwegian University of Science and Technology, Norway)

Application of hydrodynamic cavitation induced from the MACH Reactor to enhance the flotation of fine to ultra-fine PGMs from the Great Dyke Orebody
A. Singh (GoldOre Pty Ltd, South Africa), M. Dlame and M. Safari (Mintek, South Africa)

Characterizing flotation processes of Platreef PGM ores: the applicability of models based on the Weibull and γ rate constant distributions
S. Ngema, M. Safari (Mintek, South Africa) and V. Sibanda (University of the Witwatersrand, South Africa)

The network structure of talc in flotation and the depression mechanism
J. Chen, G. Gu and Y. Wang (Central South University, China)

The role of the network structure of illite in apatite flotation
G. Gu, S. Liao and Y. Wang (Central South University, China)

Gas holdup and water carrying rate measurement by conductivity sensors
E. Ravanasa and K.E. Waters (McGill University, Canada)

Optimising graphite flotation in Reflux Flotation Cell
J. Chen, W. Chimonyo and Y. Peng (University of Queensland, Australia)

Autonomous Model Predictive Control and Type-2 Fuzzy Logic Solutions for Automatic Multi-Circuit Flotation Control: Trials and Operational Results
P. Prikhodko and K. Kiselev (Conundrum Industrial Limited, UK)