

Flotation '15



Twitter #Flotation15

Sunday November 15th

- 14.00 Elsevier Author Workshop; exhibition booth and poster set-up
- 16.30-18.00 Registration and wine reception, with hot and cold canapés (accompanying persons welcome)

Monday November 16th

- 07.30 Registration desk opens. Light breakfast of filled croissants, tea, coffee and fruit juice
- 08.30 Fundamentals Symposium Opening Remarks and Presentation of MEI Award for 2014
B.A. Wills (MEI, UK)
- 08.45 Setting the scene
J.A. Finch (McGill University, Canada)
- 09.00 *Technical Session 1*
Chairmen: P. Brito-Parada (Imperial College, UK) and E. Forbes (CSIRO Mineral Resources Flagship, Australia)
- 09.00 **Keynote Lecture: What have models and measurements ever done for us?**
J.J. Cilliers (Imperial College, UK)
- 09.40 **Can roughness of particles be tuned to reach maximum flotation recoveries?**
O. Güven, F. Karakaş, E. Karağaçlıoğlu, M.S. Celik (Istanbul Technical University, Turkey), H. Çalışkan, M. Çınar (Mart University, Turkey), B.V. Hassas (University of Utah, USA) and O. Özdemir (Istanbul University, Turkey)
- 10.00 **The energy of interactions between bubbles and particles – specific surface free energy distributions and microflotation**
M. Rudolph, S.C. Chelgani, K. Meier (Helmholtz-Institute Freiberg for Resource Technology, Germany) and R. Hartmann (University of Oulu, Finland)
- 10.20 Coffee, posters and exhibition viewing
- 11.10 **The effect of particle concentration on the collision and attachment of particle-bubble aggregates in flotation using PEPT**
N.N. Ngoepe, A.N. Mainza, I. Govender (University of Cape Town, South Africa), D.J. Bradshaw (JKMRC, Australia) and D.J. Parker (University of Birmingham, UK)
- 11.30 **Direct tracer activation in positron emission particle tracking of hematite flotation from quartz**
D. Boucher, A. Jordens, R. Langlois, K.E. Waters, J. Sovechles (McGill University, Canada), T.W. Leadbeater, N.A. Rowson (University of Birmingham, UK) and J.J. Cilliers (Imperial College, UK)

- 11.50 **Comparison of the behaviour of hydrophobic and hydrophilic particles measured with PEPT using statistical methods.**
K. Cole, A. Buffler (University of Cape Town, South Africa), P. Brito-Parada, K. Hadler and J.J. Cilliers (Imperial College, UK)
- 12.10 **On-line size analysis of microbubbles – influence of physico-chemical process parameters**
S. Gulden, S. Rollié, M.-H. Kopf (BASF SE, Germany) and H. Nirschl (Karlsruhe Institute of Technology, Germany)
- 12.30 **Frother effect on bubble size – a holistic approach**
Z. Jávör, N. Schreithofer and K. Heiskanen (Aalto University, Finland)
- 12.50 Lunch
- 14.00 *Technical Session 2*
 Chairmen: M. Rudolph (Helmholtz-Institute Freiberg for Resource Technology, Germany) and S. Farrokhpay (University of Lorraine, France)
- 14.00 **Predicting bubble size distribution and air recovery in flotation systems**
P.R. Brito-Parada, S.J. Neethling, J.J. Cilliers (Imperial College, UK), K. Cole (University of Cape Town, South Africa) and M. Tong (University College Dublin, Ireland)
- 14.20 **The effect of energy input on flotation kinetics**
M. Safari, M. Harris, D. Deglon (University of Cape Town, South Africa), L.S.L. Filho and F.G. Testa (University of São Paulo, São Paulo, Brazil)
- 14.40 **A comparison of the predictability of kinetic models**
 M. Alvarez-Silva, R. Langlois, K.E. Waters (McGill University, Canada) and L. Vinnett (Federico Santa Maria Technical University, Chile)
- 15.00 **Flotation rate characterization using top of froth grades and froth discharge rates in rougher flotation circuits**
 I. Panire, L. Vinnett and J. Yianatos (University of Santa Maria, Chile)
- 15.20 Coffee
- 16.00 **Coarse particle flotation in fluidized beds**
 C. Emer and G.J. Jameson (University of Newcastle, Australia)
- 16.20 **Effect of particle size on froth stability**
I. Achaye, J. Wiese and B. McFadzean (University of Cape Town, South Africa)
- 16.40 **Investigation of the mechanism of apatite/carbonates separation in acidic flotation process using *in situ* Raman spectroscopy**
L.O. Filippov, O.B. Kaba, I.V. Filippova (Université de Lorraine, France)
- 17.00 Happy Hour, Vineyard Gardens
 Accompanying guests welcome

Tuesday November 17th

- 07.45 Registration desk opens. Light breakfast of filled croissants, tea, coffee and fruit juice
- 09.00 *Technical Session 3*
 Chairmen: R.A. Lauten (Pionera, Norway) and L. Christodoulou (Eriez Flotation Division, Canada)
- 09.00 **Keynote Lecture: Anisotropic surface-property minerals in flotation circuits**
 J.S. Laskowski (University of British Columbia, Canada)
- 09.40 **The depression of pyrite in selective flotation by different reagent systems**
Y. Mu, Y. Peng (University of Queensland, Australia) and R.A. Lauten (Pionera, Norway)
- 10.00 **The interaction of sodium mercaptobenzothiazole with gold electrode and nanorod surfaces**
K. Zhang, G.A. Hope (Griffith University, Australia), A.N. Buckley (University of New South Wales, Australia) and H. Li (Jiangsu University, China)

- 10.20 **Novel temperature-responsive polymers as selective flocculants and collectors for fines flotation**
W.S. Ng, L.A. Connal, G.V. Franks (University of Melbourne, Australia) and E. Forbes (CSIRO Mineral Resources Flagship, Australia)
- 10.40 Coffee, exhibition and poster viewing
- 11.20 **Evaluation of blended collectors for efficient recovery of PGMs from a Western Bushveld UG2 ore deposit by froth flotation**
M.G. Moja, I. Otunniyi (Vaal University of Technology, South Africa) and W.A. Ngobeni (Senmin International Pty Ltd, South Africa)
- 11.40 **Activation of platinum group minerals in the presence of sodium ethyl xanthate using copper sulphate**
M. Tadie, K.C. Corin, J.G. Wiese and C.T O'Connor (University of Cape Town, South Africa)
- 12.00 **Surfactant structure-property relationship: aliphatic alcohols and bubble rise velocity**
Y.H. Tan and J.A. Finch (McGill University, Canada)
- 12.20 **Flotation of the major copper sulphide minerals – an electrochemical viewpoint**
 N.O. Lotter, A.R. Barnes (XPS Consulting & Testwork Services, Canada) and D.J. Bradshaw (University of Queensland, Australia)
- 12.40 Lunch
- 14.00 *Technical Session 4*
 Chairman: B. Newcombe (OptiFroth Solutions Pty Ltd, Australia)
- 14.00 **Oxygen consumption by enargite, chalcopyrite and chalcocite surfaces as a function of electrochemical potential**
E. Forbes (CSIRO Mineral Resources Flagship, Australia)
- 14.20 **Effect of mineralogy on the selective flotation of enargite (Part I)**
M. Tayebi-Khorami, E. Manlapig (JKMRC, Australia), E. Forbes and G. Heyes (CSIRO Process Science and Engineering, Australia)
- 14.40 **Oxidative weathering of a copper sulphide ore and its influence on pulp chemistry and flotation**
S. Jacques (Magotteaux Andino SA, Chile), C.J. Greet (Magotteaux Australia Pty Ltd, Australia) and D. Bastin (University of Liège, Belgium)
- 15.00 **Floatability of chalcopyrite under the presence of kaolinite, using distilled and sea water**
 L. Uribe, L. Gutierrez, C. Cortes, O. Jerez (Universidad de Concepcion, Chile) and L. Reyes-Bozo (Universidad Andres Bello, Chile)
- 15.20 **Seawater divalent cations (MgCl₂ and CaCl₂) effect on the flotation of molybdenite and chalcopyrite**
 T. Hirajima, O. Ichikawa, G.P.W. Suyantara, H. Miki, K. Sasaki (Kyushu University, Japan) and A.M. Elmahdy (CMRDI, Egypt)
- 15.40 **Seawater as process water for the flotation of copper-molybdenum sulfide ores**
 S. Castro (University of Concepcion, Chile) and J.S. Laskowski (University of British Columbia, Canada)
- 16.00 Coffee
- 17.45 Coaches leave for conference dinner at Kirstenbosch Botanical Gardens

Wednesday November 18th

- 07.45 Registration desk opens. Light breakfast of filled croissants, tea, coffee and fruit juice
- 08.50 Applications Symposium Opening Remarks
 J. Wills (MEI, UK)

- 09.00 *Technical Session 5*
Chairmen: R. Kappes (Newmont Mining Corp., USA) and Y.H. Tan (McGill University, Canada)
- 09.00 **Keynote Lecture: Evolution of flotation chemistry research: a century of innovations and the emerging challenges**
D.R. Nagaraj and R.S. Farinato (Cytec Industries Inc., USA)
- 09.40 **Clariant collectors for use as alternatives to xanthate collectors in traditional sulphide flotation applications**
M. Mbonambi, L. Mahlangu (Clariant, South Africa) and J. Bezuidenhout (Clariant, Germany)
- 10.00 **Continuous, real time pulp chemistry measurements and what they tell us about metallurgical performance**
C.J. Greet and K. Selga (Magotteaux Australia Pty Limited, Australia)
- 10.20 Coffee, posters and exhibition viewing
- 11.10 **Gas dispersion properties of collector/frother blends**
X. Zhou, J.A. Finch, K.E. Waters (McGill University, Canada) and F. Cappuccitti (Flottec LLC, USA)
- 11.30 **An impedance study of mitigation effect of electrolytes on clay minerals slime coating**
S. Zhao (ALS Metallurgy, Australia), B. Guo and Y. Peng (University of Queensland, Australia)
- 11.50 **The selective separation of fluorite, barite and calcite with valonea extract and sodium fluosilicate as depressants**
Z. Ren, H. Gao and F. Yu (Wuhan University of Technology, China)
- 12.10 **The effect of biopolymers on copper flotation in the presence of kaolinite**
R.A. Lauten (Pionera, Norway), Y. Wang and Y. Peng (University of Queensland, Australia)
- 12.30 **Impact of seawater salts with calcium and magnesium removal on floatability of copper-molybdenum ores**
R.L. Jeldres, (CSIRO, Chile), D. Calisaya and L.A. Cisternas (Universidad de Antofagasta, Chile)
- 12.50 Lunch
- 14.00 *Technical Session 6*
Chairmen: K. Heiskanen, Outotec, Finland and J.E. Dickinson (University of Newcastle, Australia)
- 14.00 **Beneficiation of the Nechalacho rare earth deposit: froth flotation**
A. Jordens, C. Marion and K.E. Waters (McGill University, Canada)
- 14.20 **A practical process mineralogy approach to advancing the flowsheet for the Kamao Project**
E. Whiteman, N.O. Lotter (XPS Consulting & Testwork Services, Canada) and S.R. Amos (Ivanhoe Mines Ltd, South Africa)
- 14.40 **Investigating the recovery of ultrafine cassiterite from tailings disposals using oil-assisted flotation methods**
T. Leistner, S.C. Chelgani, M. Rudolph (Helmholtz-Institute Freiberg for Resource Technology, Germany) and U.A. Peuker (TU Bergakademie Freiberg, Germany)
- 15.00 Coffee
- 15.40 **Development of an automated sample transport system for mining flotation plants**
B. de Jong and P. Hofmeyr (IMP, South Africa)
- 16.00 **Flotation control incorporating DMC and image analysis**
R. Koorts (BlueESP, South Africa) and L. van der Bijl (Stone Three, South Africa)
- 16.20 **Stabilizing flotation cell pulp level for improved copper recovery**
M. Ferra (REXA, USA)

- 16.40 **A multidisciplinary approach to the optimization and control of a copper-zinc grinding and flotation circuit**
M. Westcott, F. van Zyl (SGS, South Africa), M. Taghimohammadi, D. Hatton (SGS, Canada) and N. Arslan (First Quantum, Turkey)
- 17.00 Happy Hour, Vineyard Gardens
Accompanying guests welcome

Thursday November 19th

- 07.30 Registration desk opens. Light breakfast of filled croissants, tea, coffee and fruit juice
- 08.30 *Technical Session 7*
Chairmen: L.O. Filippov (Université de Lorraine, France) and E. Whiteman (XPS Consulting & Testwork Services, Canada)
- 08.30 **Keynote Lecture: Where is the standard flotation test?**
P. Amelunxen (Aminpro, Chile)
- 09.10 **Correlation between top of froth grade and operational variables in rougher flotation circuits**
J. Yianatos, L. Bergh, L. Vinnett, I. Panire and V. Iriarte (University of Santa Maria, Chile)
- 09.30 **The role of swelling clays versus non-swelling clays in flotation**
S. Farrokhpay, B. Ndlovu and D. Bradshaw (JKMRC, Australia)
- 09.50 **Efficiency in the design of large scale porphyry type copper concentrator flotation circuits in South America**
S. Saich (Promet101 Consulting, Chile)
- 10.10 Coffee, exhibition and poster viewing
- 10.50 **A new flotation gas technology for treatment of low grade high carbonate auriferous pyrite ores**
R. Kappes and J. Orlich (Newmont Mining Corp., USA)
- 11.10 **Improving the recovery of fine gold-copper particles using picobubbles enhanced column flotation**
R. Diaz, H. Mamani, C. Curo (Cerro Corona, Peru), J. Concha and C. Concha (Eriez Flotation Division, Peru)
- 11.30 **Gas dispersion characterization campaign in Outotec TankCell e500 at Kevitsa Cu-Ni-PGE concentrator**
T. Mattsson, R.A. Grau, M. Honkanen (Outotec, Finland) and T. Maksimainen (Kevitsa Mine, Finland)
- 11.50 **Recovery of coarse gold and copper using fluidized-bed flotation**
J. Kohmuench (Eriez Flotation Division, USA), J. Concha (Eriez Flotation Division, Peru), L. Christodoulou and E. Wasmund (Eriez Flotation Division, Canada)
- 12.10 **A pilot scale investigation into fine coal recovery from tailings using the Reflux Flotation Cell**
J.E. Dickinson and K.P. Galvin (University of Newcastle, Australia)
- 12.30 **Phenomenological model of pilot Jameson flotation cell**
L. Bergh, J. Yianatos, F. Orellana and P. Quijanes (Santa Maria University, Chile)
- 12.50 Lunch
- 14.00 *Technical Session 8*
Chairman: D.J. Bradshaw (JKMRC, Australia)
- 14.00 **Improving flotation energy efficiency by optimizing cell hydrodynamics**
E. Tabosa, K. Runge, P. Holtham and K. Duffy (Metso Process Technology and Innovation, Australia)

- 14.20 **Industrial application of the 660 m³ SuperCell™ equipped with the nextSTEP™ rotor and stator**
D. Lelinski, K. Caldwell Y. Yang, T. Olson, F. Traczyk and M. Jespersen (FLSmidth, USA)
- 14.40 **The effect of impeller shape on flotation performance in a 680 m³ KYF flotation cell**
S. Zhengchang, Z. Ming, S. Shuaixing and F. Xuesai (Beijing General Research Institute of Mining and Metallurgy, China)
- 15.00 **Practical understanding and application of the dual outlet in industrial flash flotation cells**
B. Newcombe (OptiFroth Solutions Pty Ltd, Australia) and J. Seppelt (Newcrest, Australia)
- 15.20 **Evaluation of pneumatic flotation applied to iron ores**
N.P. Lima (Vale SA, Brazil), A.E.C. Peres (UFMG, Brazil), L.C. Aquino and G. Niekerk (MBE, Brazil)
- 15.40 Conference Summary
D.J. Bradshaw (JKMRC, Australia)
- 16.00 Closing remarks and invitation to Flotation '17
A.J. Wills (MEI, UK)
- 16.10 Coffee and Farewell wine function, Vineyard Gardens
Accompanying guests welcome

Friday November 20th

- 14.15 Optional guided hike to the top of Table Mountain
All invited, but this is undertaken at your own risk

POSTERS

Fundamentals Symposium

Displayed 16th-17th November

Study of selective flotation of chalcopyrite and molybdenite with various oxidation

T. Hirajima, H. Matsuoka, H. Miki, A.M.E.A. Mohamed and K. Sasaki (Kyushu University, Japan)

Effect of using different grinding media on the flotation of a base metal sulphide ore containing platinum group minerals

Z.G. Song (Beijing General Research Institute of Mining & Metallurgy, China), K. Corin, J.G. Wiese and C.T. O'Connor (University of Cape Town, South Africa)

The effect of froth depth on flotation performance of a laboratory-scale tank

A.J. Morrison, P.R. Brito-Parada and J.J. Cilliers (Imperial College, UK)

The influence of electrolytes in water on the flotation behaviour of a Cu-Ni-PGE ore

M.S. Manono (Vaal University of Technology, South Africa), K.C. Corin and J.G. Wiese (University of Cape Town, South Africa)

Surface-enhanced Raman scattering studies of dibutyldithiophosphate and 2-mercaptopbenzothiazole flotation collectors

G.K. Parker, G.A. Hope and R. Woods (Griffith University, Australia)

Modelling the turbulence change in a 3m³ flotation cell measured using a piezoelectric vibration sensor

J. Meng, W. Xie, D. Bradshaw (JKMRC, Australia), E. Tabosa and K. Runge (Metso Process Technology & Innovation, Australia)

Selective flotation of quartz from iron ores with a new ester-containing Gemini cationic collector M-302B

D.-B. Liu, G.-J. Mei (Wuhan University of Technology, China) and X.-Q. Weng (Chang'an University, China)

The role of electrolytes in affecting copper flotation in the presence of bentonite

Y. Wang, Y. Peng, T. Nicholson (University of Queensland, Australia) and R.A. Lauten (Pionera, Norway)

Investigation of bubble-particle attachment mechanism for copper sulphide minerals

B. Albjanic, N. Subasinghe, R. Alorro, G. Xu (Curtin University, Australia), D. Bradshaw (JKMRC, Australia) and A.V. Nguyen (University of Queensland, Australia)

Microflotation using *Jatropha Curcas* oil as apatite collector

I.L.A. Moraes, A.C Silva, E.M.S. Silva, V.L. Morais and C.M.S. Filho and D.N. Souza (Federal University of Goiás, Brazil)

Influence of conditioning and flotation time using Macaúba's oil in microflotation

C.A.T. Pachêco, A.C. Silva, E.M.S. Silva (Federal University of Goiás, Brazil), D.N. Souza and T.P. Fontes (Federal Institute of Education, Brazil)

The effect of illite on copper and gold flotation in fresh and sea water

M. Zhang and Y. Peng (University of Queensland, Australia)

Depression of copper-activated pyrite by lignosulfonate-based biopolymers with different compositions

Y. Mu, Y. Peng (University of Queensland, Australia) and R.A. Lauten (Pionera, Norway)

A review of turbulence measurement techniques for flotation

J. Meng, W. Xie, D. Bradshaw, E. Manlapig (JKMRC, Australia), E. Tabosa and K. Runge (Metso Process Technology & Innovation, Australia)

Relating collector-mineral affinity to hydrophobicity in sulphide flotation

J. Taguta, B. McFadzean and C.T. O'Connor (University of Cape Town, South Africa)

Operation of a bench scale recycling flotation cell

A. Norori-McCormac, P.R. Brito-Parada and J.J. Cilliers (Imperial College, UK)

Surface chemistry analysis of monazite and dolomite

E.R.L. Espiritu and K.E. Waters (McGill University, Canada)

Effect of gas rate and impeller speed on bubble size in seawater solutions for mechanically agitated flotation machines

J.M. Sovechles, A. Lelaka, B. Johnson, C.M. Marion and K.E. Waters (McGill University, Canada)

Break-up in formation of small bubbles: comparison between low and high frother concentrations

P. Chu, K.E. Waters and J.A. Finch (McGill University, Canada)

Flotation of Nechalacho rare earth deposit gravity tailings

C. Marion, A. Jordens and K.E. Waters (McGill University, Canada)

Study of copper and xanthate adsorption on pyrite using IGC and XPS

S. Mohammadi-Jam and K.E. Waters (McGill University, Canada)

Tracking multiple fine particles in flotation froths with positron emission particle tracking

K. Cole, C. Liu, M. van Heerden, I. Govender, A. Buffler (University of Cape Town, South Africa), M. Bickell (KULeuven, Belgium), A. Morrison, A. Norori-McCormac, M. van Heerden, P. Brito-Parada, K. Hadler and J.J. Cilliers (Imperial College, UK)

A model system for the investigation of rare earth collector interaction

J. Cui and G.A. Hope (Griffith University, Australia)

The flotation behavior of Al₂SiO₅ polymorphic minerals with anionic and cationic collectors in acidic conditions

J. Jin, H. Gao (Wuhan University of Technology, China), X. Chen and Y. Peng (University of Queensland, Australia)

Redox potential control during flotation of sulphide minerals associated with PGMs

W. Chimonyo, K.C. Corin, J.G. Wiese and C.T. O'Connor (University of Cape Town, South Africa)

Investigation of the interactive effects of reagent suite in froth flotation

T. Moimane, K.C. Corin and J.G. Wiese (University of Cape Town, South Africa)

Surface tension and bubble size measurements of some typical sulphide frothers using a two-phase system

S. Sondashi and L.K. Witika (University of Zambia, Zambia)

Comparative study of pneumatic flotation and mechanical flotation cell

R. Roushan (Indian School of Mines, India), K.M.P. Singh, T.G. Charan (Central Institute of Mining & Fuel Research, India), M. Nandy and A. Ojha (MBE Coal & Mineral Technology, India)

Applications Symposium

Displayed 18th-19th November

Investigating the effects of particle shape on entrainment at various froth depths

L. Little, J. Wiese, M. Becker and A. Mainza (University of Cape Town, South Africa)

Characterising mineral particle perimeter textures for flotation

C.F. Vos, C.L. Evans, E.M. Wightman, E.V. Manlapig, D.J. Bradshaw (JKMRC, Australia) and R. Kappes (Newmont Mining Corp., USA)

The entrainment effect on the performance of iron ore reverse flotation

N.P. Lima, A.C. Tavares (Vale S.A., Brazil), T.C.S. Pinto (Vale Institute of Technology, Brazil) and J. Sweet (University of Cape Town, South Africa)

Recent investigations on flotation of black-shale hosted copper ores from Sangerhausen-Mansfeld mining district at UVR-FIA GmbH

I. Bremerstein, J. Schaefer (UVR-FIA GmbH, Germany) and A. Kamradt (Martin Luther University Halle-Wittenberg (Germany)

Exploring froth flotation and selective flocculation in recovering rare earth elements from waste phosphors

M. Yu and G. Mei (Wuhan University of Technology, China)

Effect of process factors on beneficial and harmful elements in flotation concentrate of phosphate ore

X. Li, Q. Zhang, Z. Liu, W. Cheng, X. Zhang and Y. Qiu (Guizhou University, China)

Improving the flotation scale up process by introducing turbulence parameters to the AMIRA P9 model

E. Amini (University of Queensland, Australia), W. Xie and D. Bradshaw (JKMRC, Australia)

The depression of gangue minerals in copper sulphide flotation by selective oxidation

C.J. Greet (Magotteaux, Australia) and A. Hitchener (Evonik Industries, Australia)

Kinetic comparison of a sulphide mineral performance in flash, column and conventional flotation

B. Newcombe (OptiFroth Solutions Pty Ltd, Australia)

Beneficiation of high carbonate diatomaceous earth by flotation

I.V. Filippova, L.O. Filippov, V.V. Severov and J. Machault (Université de Lorraine, France)

Gas hold-up estimation in flotation machines using image techniques and superficial gas rate

L. Vinnett, T. Ledezma (Federico Santa Maria Technical University, Chile), M. Alvarez-Silva and K. Waters (McGill University, Canada)

Optimization of reagents for the flotation of Kumba Iron Ore's Sishen Mine jig slimes

G.M. Molebiemang and A.A. Adeleke (Vaal University of Technology, South Africa)

Developing a new flotation-modification technology to improve the quality of cosmetic sericite

J. Tian, H. Gao and J. Guan (Wuhan University of Technology, China)

A case study investigating regrind particle size and flotation performance using INCA Mineral liberation analysis

K. Hadler, S. Bailey, N. Wilshaw (Grinding Solutions Ltd, UK), C. Wilkins and A. Dijkstra (Plymouth University, UK)

Flotation of copper-molybdenum ores in seawater and pyrite depression by reagents alternatives to lime

R.I. Jeldres, L. Cortes (CSIRO, Chile) and L.A. Cisternas (Universidad de Antofagasta, Chile)

Development and calibration of a dynamic flotation circuit model

A. Sorsa, P. Seppälä, M. Paavola, J. Ruuska, H. Kumar, K. Leiviskä (University of Oulu, Finland), A. Remes (Outotec Oyj, Finland) and P. Lamberg (Luleå University of Technology, Sweden)

Flotation blowers selection and design for maximum recoveries

S. Ayoub (Continental Engineering Services Aus Pty Ltd, Australia)

Hydrodynamical distributed control of pilot Jameson flotation cell

L. Bergh, J. Yianatos, P. Quijanes and F. Orellana (Santa Maria University, Chile)

Impeller radial velocity and air flow rate influence on copper scavenger flotation recovery

B. Bazan (KGHM Polska Miedz S.A. (Poland), K. Witecki (KGHM CUPRUM Ltd Research & Development Center, Poland) and A. Bazan-Krzywoszańska (University of Zielona Gora, Poland)

The measurement of froth phase bubble size distribution as a function of gas rate, froth depth and chemical environment in a semi-batch lab cell

C. Bhondayi (University of South Africa, South Africa) and M.H. Moys (University of the Witwatersrand, South Africa)

Two-stage fast flotation of fine coal using Reflux Flotation

K. Jiang, J.E. Dickinson and K.P. Galvin (University of Newcastle, Australia)

The effect of impeller backward angles on flotation cell performance

Chen Dong, Zhang Ming, Fan Xuesai and Zhang Yuejun (Beijing General Research Institute of Mining and Metallurgy, China)

Using flotation to recover monazite from a zircon reject stream

E. Tranvik, B.I. Pålsson (Luleå University of Technology, Sweden), M. Becker and J.-P. Franzidis (University of Cape Town, South Africa)

Separation of azodicarbonamide from the surface of diatomite by froth flotation

Qin Zhang, Jun Xie, Jianhua Chen and Wei Cheng (Guizhou University, China)

Remove sulfur from coarse particle hemo-imenite ore by CLF Flotation Cell

Zhang Yuejun, Han Dengfeng, Feng and Tianran, Han Zhibin (Beijing General Research Institute of Mining and Metallurgy, China)

Flotation circuit design including grinding

D.A. Calisaya (Universidad de Antofagasta, Chile), A. López, M. Hernández (Universidad Autónoma de San Luis de Potosí, México), E.E. Gálvez (Universidad Católica del Norte, Chile), L.A. Cisternas (Universidad de Antofagasta and CICITEM, Chile) and R.I. Jeldres, (CSIRO, Chile)

Industrial test of alternative depressant in flotation of molibdenite, Codelco Division Andina

I. Morin, A. Dondero, G. Sandoval (Pontificia Universidad Católica de Valparaíso, Chile), H. Tobar and M. Bustamante (Codelco, Chile)

Considerations of perfect mixed model applied to a flotation property-based approach

G. Sandoval-Zambrano (Pontificia Universidad Católica de Valparaíso, Chile) and G. Montes-Atenas (Universidad de Chile, Chile)