Papers to be presented at Copper Cobalt Africa Conference 2018

**Plenary Addresses**

**Zambian mining's polymetallic futures**  
S. Chilimba, Minerals Council of Zambia, Zambia

**Cobalt and rise of the lithium-ion battery megafactories**  
C. Rawles, Benchmark Mineral Intelligence, United Kingdom

**The challenges of mining, particularly in Africa**  
M. Pascal, First Quantum Minerals Ltd., Zambia

**Overview and outlook for the cobalt market**  
L. Smith, Core Consultants, United Kingdom

**The Giant Kamoa–Kakula Project in the Democratic Republic of Congo**  
S. Amos, V. Nkuna, and B. Matsetela, Kamoa Copper SA and Ivanhoe Mines, South Africa

**Urban mining and the pivotal role of hydrometallurgical approaches for recycling secondary source feeds**  
B. Currie, Ausenco, Australia

**General and Economics**

**Production output of primary copper in South Africa: Predicting future trends using the intensity of use theory**  
M.J. Nong, P.J.K. Leeuw, and N.M. Cudjoe, University of the Witwatersrand, South Africa

**Disruptive effect of battery recycling on the near future cobalt market**  
N. Steenkamp, Consulting Geologist and Geotechnical Engineer, South Africa

**The state of occupational safety in the South African mining industry: progress, successes and challenges**  
S. Phakathi and K. Letsoalo, Minerals Council of South Africa

**Outotec service portfolio and recent development in managing asset performance**  
J. Lempainen and M. Lindeman, Outotec, Finland

**Training of engineering graduates in Zambia to meet mining industry needs**  
J. Kapobe, C. Mazala, and S. Simukanga, Mopani Copper Mines and Zambian Higher Education Authority, Zambia

**‘Training for life’**  
J. Kapobe, M. Milupi, A. Lemmer, C. Mazala, and R. Phiri, Mopani Copper Mines, Zambia

**Polymetallic processing within a circular economy**  
P. van Staden, M. Gerick, V. Conic, and D. Milanovic, Mintek, South Africa and Mining and Metallurgy Institute, Serbia

**Relationship between Kansanshi ore mineralogy applied and copper recovery across different processing circuits**  
L. Little, A. Prinsloo, Q. Mclennan, B. Kaputula, and C. Siame, Kansanshi Mining, Zambia

**Copper ore variability: benefits of advanced simulation**  
M. Talikka, A. Remes, M. Hicks, J. Lipo, V.-P. Takalo, S. Khizanishvili, and M. Natshvlishvili, Outotec, Finland and JSC RMG Copper, Georgia

**Mining**

**Satellite synthetic aperture radar for mine and tailings dam monitoring**  
N. Pendock, DIRT Exploration, South Africa

**A ranking methodology to prioritise artisanal and small-scale mining projects**  
S. Rupprecht, University of Johannesburg, South Africa

**Review of radar technologies for slope stability in open-pit mines**  
J. Oosthuizen, VBKOM Consulting, South Africa

**Determination of an effective slope monitoring regime for mining a failed zone on the north wall of Nchanga Open Pit-Cut2**  
C. Silwamba, S. Syamusana, and B. Siwakwi, Konkola Copper Mines, Zambia

**Comminution**

**Assessing the benefits of automatic grinding control using particle size tracking technology for true on-line particle size measurement**  
R. Maron, C. O’Keefe, and J. Sepulveda, CIDRA Minerals Processing, USA and J-Consultants, Chile

**Converting of Lubambe Copper Mine ball mill from grate discharge type to an overflow**  
A. Mhone, Lubambe Copper Mines, Zambia

**Beneficiation of a complex low-grade chalcopyrite ore**  
L. Mweene and S. Subramanian, Indian Institute of Science, India

**Influence of water balance and classifier choice on energy efficiency of milling circuits**  
A. Hinde, E. Ford, J. Makola and, A. Jan, Independent consultant, Mintek, Derrick Solutions International, South Africa and Derrick Corporation, USA

**Merits of optimized milling configuration on process performance: a case study of the mixed ore at Kasanshi**  
C. Chongo, K. Ngoisa, P.A. Bepswa, and A.N. Mainza, Kansanshi Mine, Zambia and University of Cape Town, South Africa

**Geology, Mineralogy and Geometallurgy**

**An African Copperbelt-style district in Colombia: Insights from long-wave infrared satellite imaging**  
D. Forest and N. Pendock, N-Side Mining Technology, Singapore
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**Flotation**
Empirical model of recovery response of copper sulphide circuit at Kansanshi Mine
M. Lusamboa and F.K. Mulenga, Kansanshi Mine, Zambia and University of South Africa, South Africa
Continuous improvement of a copper concentrator by advanced flotation control
P.D. Knoblauch, Mintek, South Africa
Copper recovery from carbonaceous sulphide ore by flotation
R.S. Magwane, K. Haga, A. Batnasan, A. Shibayama, M. Kosugi, R. Kawarabuki, K. Mitsuhashi, and M. Kawata, Akita University and Nittetsu Mining, Japan
Development of flotation reagent automated system
C. Ngulube, W. Munalula, and I. Mkandawire, Kansanshi Mining, Zambia
Flotation process metering of concentrate, slurry, air and water flows using non-intrusive fibre-optic sensing
D. Finfer, Silixa Ltd, United Kingdom
Frothing and froth control in copper leach washing and purification circuits
N. Mautsa, M. Bower, B. Nel, and J. Miller, Kemira, South Africa and United Kingdom

**Pyrometallurgy**
Sonic injection in sulfide smelting: an update
J. Kapusta, BBA Inc., Canada
Operational experiences of Mutulira Isasmelt technology since inception
J. Kapobe, J. Sasikumar, K. Chitundu, C. Mazala, and R. Phiri, Mopani Copper Mines, Zambia

**Hydrometallurgy**
Advances in cobalt recovery and purification
C. Pawlik, Mintek, South Africa
Milling in acidic raffinate solution in copper-cobalt hydrometallurgical circuits: the next step towards reducing operating costs
E. Mkhiize and S. Kumwenda, Senet, South Africa
Innovative process design for oxide ores in the Democratic Republic of Congo
D. Alexander, C. van der Merwe, R. Lumbule, and J. Kgomo, Eurasian Resources Group, South Africa and Boss Mining, DR Congo
Advances in design of copper–cobalt hydrometallurgical circuits: copper circuits
G. Miller, Miller Metallurgical International, Australia

**Leaching**
Acid bake-leach process for recovering copper and cobalt from complex sulphide-oxide concentrates
P. Mwamba, J.H. Masinja, J. Manchisi, and Y.R.S. Hara, University of Zambia and Copperbelt University, Zambia
Laboratory column heap leaching of cobalt using raffinate and sodium metabisulphite
P. Bwando, BASF, DR Congo
MesoTherm™ bio-oxidation technology: a simple process for the treatment of base metal sulphide ores
C. van Buuren, M. Nicolle, and J. van Niekerk, Outotec, South Africa (Pty) Limited, South Africa

**Solvent Extraction**
On-line analysis in solvent extraction process
R. Abod, L. Koresaar, D. Moreno, and T. Balbin, Outotec, Finland and Cobre las Cruces, Spain
Techno-economic evaluation of BASF’s new high-temperature solvent-extraction reagent
J.J. Taute and S. Archer, BASF and Senet, South Africa
Management of mixing continuity in a solvent-extraction plant with a leach solution of high silica at Ruashi Mining
A. Kashala, G. Mitshabu, Y. Cheng, L. Bradfford, A. Modi, and P. Tshisand, Ruashi Mining SAS and BASF, DR Congo
Silica mitigation in copper solvent-extraction circuits
F. Crundwell, K. Sole, O. Diamini, and G. Kruiger, CM Solutions, University of Pretoria and Market to Africa, South Africa
Loaded organic washing for impurities removal from electrolyte
D. Nel, J. Kyabu, T. Ngoy, P. Koji, and P. Bwando, Mutanda Mining and BASF, DR Congo
Additive to mitigate crud formation in solvent extraction operations
B. Mbao, L. Cohen, A. Fischmann, L. Moya, M. Moser, and O. Tinkler, Solvay EMEA, Zambia and Solvay, USA

**Ion Exchange and Membranes**
Solvent-imregnated resins for niche applications in metal processing
V. Yahorava, V. Bazhko, and R. Leso, Mintek, South Africa
Metal removal from synthetic mine tailing leachates using fixed-bed ion-exchange columns
A.L. Riley, S.E. Pepper, E.L. Sexton, and M.D. Ogden, University of Sheffield, UK
Recovery of cobalt and nickel from acidic waste streams: effect of chloride, sulfate and column studies using phosphonic acid functionalised silica
J.T.M. Amphlett, S.E. Pepper, W. Peng, and M.D. Ogden, University of Sheffield, UK
Cobalt–nickel pertraction refinery to process pregnant leach solution from recycled spent catalysts. Part 1: cobalt extraction from a binary system
N. Mans, D. van der Westhuizen, D. Bruinsma, P. Cole, J. du Toit, E. Munnik, A. Coates, V. Coetzee, and H. Krieg, North-West University, Bruinsma Solutions, Peter Cole Metallurgical Services, DRA Global and Minemet, South Africa
Electrorefining and Electrowinning
Copper refinery modernisation, Mopani Copper Mines plc, Mufulira, Zambia
M. Chooye, R. Patel, A. Pranowo, and B. O’Rourke, Mopani Copper Mines plc, Mufulira, Zambia and Glencore Technology, Australia

Advances in permanent cathode maintenance solutions
L. Nordlund and H. van der Walt, Outotec, Finland

Lead contamination of copper cathodes, direct electrowinning compared with leach/solvent extraction/electrowinning
G. Mitshabu, C. Tshula, P. Tshisand, B. Faqing, and A. Feather, BASF, Gécamines Luilu Refinery and Ruashi Mining, DR Congo and BASF, South Africa

Electrochemical characterisation of cobalt electrowinning from dilute sulphate solutions
R. Wildenboer, University of Pretoria, South Africa

Design of a selection guide for copper electrowinning sizing: cell arrangement as a function of rectiformer size for varying throughputs

Determination of MCM2 copper cathode sampling regime
O. Mahenga, D. Muma, B. Muleya, E. Musenge, and G. Bwalya, Mopani Copper Mines and Zambia Revenue Authority Mineral Beneficiation Laboratory, Zambia

Tailings
Dewatering tailings for dry stacking: Rapid water recovery by means of centrifuges
R. Klug, A. Rivadeneira, and N. Schwarz, Flottweg, Germany, Buenavertura, Peru and Schwartz Global Consulting, South Africa

Tailings thicker improvements at Sentinel Copper Mine
M. Bower and M. Kynkaanniemi, Kemira Chemicals, United Kingdom and Minera Panama, Panama

Projects
Processing of Copperbelt historical copper smelter slag through the Chibuluma concentrator and future prospects for maximizing value recovery
B. Kalumba, A. Mwanza, and J. Sikamo, Chibuluma Mines, Zambia

BOSS 50: A fast-track projects in the Democratic Republic of Congo
A. Lathwood, BOSS Mining, DR Congo

The historic Kipushi zinc project in the Democratic Republic of Congo
B. Matsetela, V. Nkuna, and S. Amos, Ivanhoe Mines and Kamoa Copper SA, South Africa

The Mutoshi Project - Part I: Metallurgical testwork, process design and project delivery
P. Ilunga, D. Samal, M. Nicolle, M. Lampi, K. Valkama, J. Edwards, and N. Tatalias, Consulting Metallurgist and Chemicals of Africa SARL (CHEMAF), DR Congo, Outotec and METC, South Africa and Outotec, Finland

Project evaluation: The drivers behind a mineral project's value
B. Botha, VBKOM Consulting, South Africa

Operational readiness: from project to operating asset
R. Taute and P.M.J.G. Thomson, SENOPS, South Africa