Monday: 1 August 2016

07:00 – 08:00  Registration & early morning refreshments

08:00 – 08:10  Opening Address:
               R.T. Jones, President, SAIMM

Session 1  Plenary Session: S. Ndlovu
08:10 – 08:50  Keynote: Fundamentals of Hydrometallurgy: Solids, Solutions, and Nanoscience
               K. Osseo-Asare, Penn State University, USA
08:50 – 09:30  Keynote: Corrosion, leaching, crystallisation and flotation: four sides of the same coin
               F.K. Crundwell, CM Solutions, South Africa
09:30 – 09:55  The FLSmidth® Rapid Oxidative Leach (ROL) Process: A mechano-Chemical Approach and Industry Applications for Rapid Metal Sulphide Dissolution
               M. Mulligan, D. Chaiko, F. Baczek, S. Rocks, C. Eyzaguirre, C. Dickinson and R. Klepper, FLSmidth, USA
09:55 – 10:20  Extraction of Rare-Earth Elements from Iron-Rich Rare-Earth Deposits
               K. Bisaka, I.C. Thobadi and C. Pawlik, Mintek, South Africa
10:20 – 10:30  Sponsor Presentation: Solvay Cytec Group
10:30 – 11:00  Mid Morning Refreshments

Session 2A  Leaching: A. Mainza
11:00 – 11:25  A Phreeqc Model of Heap Leaching
               P.J. van Staden and J. Petersen, Mintek and University of Cape Town, South Africa
11:25 – 11:50  Chromium (VI) Generation During Dry and Wet Milling of Chromite Ore
               N.R. Mabwe, C. Chitsora and D.J. Simbi, University of Zimbabwe and Chinhoyi University of Technology, Zimbabwe
11:50 – 12:15  Indicative Vanadium Deposition in the Processing of Titaniferous Magnetite by the Roast-Leach and Electric Furnace Smelting Processes
               X.C. Goso, H. Lagendijk, M. Erwee and G. Khosa, Mintek, South Africa
12:15 – 12:20  Effects of Calcium Oxide on the Washing Behaviour of Secondary Zinc Oxides
               C. Benigni, C. Pichler and J. Antrekwitsch, University of Leoben, Austria (POSTER)
12:20 – 12:25  Purification of coal fly ash leach liquor for alumina recovery
               M. Rampou and S. Ndlovu, The University of the Witwatersrand, South Africa (POSTER)
12:25 – 12:30  Recovery of platinum group metals from dilute solutions: A review
               M.M.M. Mmonatau, University of the Witwatersrand, South Africa (POSTER)
12:30 – 13:20  Lunch

Session 2B  Value from Industry Waste: H. Potgieter
11:00 – 11:25  Comparison of Nitric and Sulphuric Acid Leaching of Metals from Printed Circuit Board Waste
               W.A. Rossouw and C. Dorfling, University of Stellenbosch, South Africa
11:25 – 11:50  Treatment of Printed Circuit Board Wastes by a Hydrometallurgical Process
               I. Birloaga, I. De Michelis and F. Vegliò, University of L’Aquila, Italy
11:50 – 12:15  A Kinetic Investigation of Iodine Leaching of Gold Leaf from Electronic Circuit Boards
               Z. Sadan, V. Nlozakhe, M. Amirudin, T. Moyo, D. Bradshaw and J. Petersen, University of Cape Town, South Africa
12:15 – 12:20  Microbial ferrous iron oxidation at low temperature conditions in a packed column bioreactors
               E. Chukwuchendo and T.V. Ojumu, Cape Peninsula University of Technology, South Africa (POSTER)
12:20 – 12:25  Arsenic Leaching from Mine Tailings by a Mesophilic Bacterial Culture in Continuous Stirred Tank Reactors
               D. Borja, R.A. Silva, K.A. Nguyen, J.H. Park, I.E. Ngoma, J. Petersen, and H. Kim Chonbuk National University Korea, Institute of Mine Reclamation Technology, Korea, University of Cape Town, South Africa (POSTER)
12:25 – 12:30  Spatial analysis of the colonisation of low grade mineral sulphide ore and its associated leaching in a 1 m bioreach column
               E. Ngoma, E. Govender-Opitz, R. Huddy, M. Smart, and S.T.L. Harrison, University of Cape Town, South Africa (POSTER)
12:30 – 13:20  Lunch
## Preliminary Programme · Hydrometallurgy 2016 · 1–3 August 2016

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<tr>
<th>Time</th>
<th>Session 6A</th>
<th>Session 7A</th>
<th>Session 8A</th>
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<td>10:20–10:30</td>
<td>Sponsor Presentation: Outotec</td>
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<td>10:30–11:00</td>
<td>Mid-morning refreshments</td>
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### Session 6A: Water Treatment and Utilisation: O. Bazhko

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<tr>
<td>11:00–11:25</td>
<td>A Review of Methods for the Quantification of Water Use in South African Mines</td>
<td>D. Dheda, C.M. Sheridan and K.G. Harding, University of the Witwatersrand, South Africa</td>
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<tr>
<td>11:25–11:50</td>
<td>Acid Mine Drainage Water Treatment using the SAVMIN™ Process</td>
<td>M. van Rooyen, Mintek, South Africa</td>
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<td>11:50–12:15</td>
<td>Comparison of the Efficiency of Defluoridation by Titanium Dioxide and Fly Ash</td>
<td>J.H. Potgieter and R.M.C. Mathipa and M.P. Mawasha, University of the Witwatersrand, South Africa</td>
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<td>12:15–13:10</td>
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### Session 7A: Precipitation, Crystallisation and Adsorption: C. Dorfling

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<tr>
<td>13:35–14:00</td>
<td>Demonstration of Magnesium Hydroxide Recycle Technology Using an Elutriation Technique</td>
<td>S. Mokoena and C. Pawlik, Mintek, South Africa</td>
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<tr>
<td>14:25–15:00</td>
<td>Mid afternoon refreshments</td>
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### Session 8A: Value from Industry Waste: P. Cole

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### Session 6B: Emerging Technologies: D. Tharandt

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<tr>
<td>11:25–11:50</td>
<td>Scoping Study of the Upgrading of Fluxed and Fluxless Titaniferous Magnetite Slags using the Upgraded Slag Process</td>
<td>X.C. Goso, J. Petersen, J. Nell and K. Bisaka, Mintek, University of Cape Town and Hatch, South Africa</td>
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<td>11:50–12:15</td>
<td>Handling the disposal of fine coal slurries for waste minimisation and prevention of acid rock drainage</td>
<td>A. Kotsiopoulos, J. Broadhurst and S.T.L. Harrison, University of Cape Town, South Africa (Presentation only)</td>
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<td>12:15–13:10</td>
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### Session 7B: Leaching—Uranium: M. Dworzansowski

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<tr>
<td>13:10–13:35</td>
<td>A Value-Based Approach to Leach Optimization at Rössing Uranium Limited</td>
<td>N. Jansen van Rensburg and J. Petersen, Rössing Uranium Limited, Namibia and University of Cape Town, South Africa</td>
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<tr>
<td>13:35–14:00</td>
<td>Kinetics of Uranium Extraction from Synthetic Coffinite — A Comparison with Synthetic Uraninite and Brannerite</td>
<td>H.S. Reynolds, R. Ram, M.I. Pownceby, J. Tardio, L. Jones and S.K. Bhargave, RMIT University, Australia and CSIRO Mineral Resources, Australia</td>
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<tr>
<td>14:00–14:25</td>
<td>Process Chemistry and Mineralogy of Brannerite Leaching</td>
<td>R. Gilligan and A.N. Nikoloski, Murdoch University, Australia</td>
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### Session 8B: Electrochemical Studies: V. Sibanda

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<td>15:00–15:25</td>
<td>Chalcopyrite dissolution using Electrochemical Tests</td>
<td>E.C. Beltrán, G. Frisch and G.L. Velásquez, Institut Für Anorganische Chemie, Germany and University of Santiago, Chile</td>
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<tr>
<td>15:25–15:50</td>
<td>Probing the Surface Chemistry of Uranium Refractory Ores with a Microelectrode</td>
<td>L.A. Jones, R. Ram, J. Tardio, M. Pownceby, M. Chen and S. Bhargava, RMIT University, Australia and CSIRO, Australia</td>
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<td>15:50–16:10</td>
<td>Investigation of the Mechanism of Dissolution of Chalcopyrite using Photo-Effects</td>
<td>L.J. Bryson, A. van Aswegen, B. Knights and F.K. Crundwell, Anglo American and CM Solutions South Africa</td>
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<td>16:10–16:20</td>
<td>Days 2 Closure</td>
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Wednesday: 3 August 2016

07:00–08:00  Registration and early morning refreshments
08:00–08:10  Welcome:
              S. Ndlou, Conference Chair Person

Session 9  Plenary Session: F. Crundwell
08:10–08:50  Keynote: Hard times for the Resource Sector - a
catalyst for innovation research
              S.K. Bhargava, RMIT University, Australia

08:50–09:30  New Uranium Leach and Recovery Circuits using
Developments from Copper Processing Technology
              G. Miller, Miller Metallurgical Services Pty Ltd, Australia

09:30–09:55  Comparative Study of the Influence of Microwave
Pretreatment on Zinc Leaching from Coarse Cone- and High-Pressure Griding Roller-Crushed
Sphalerite Ore
              E. Charikinya and S.M. Bradshaw, Stellenbosch University, South Africa

09:55–10:20  Dissolution Kinetics of Copper Ores and
Concentrate with Sea Water and Discard Brine
              V. Quezada and L. Velásquez, Universidad Católica del Norte and Universidad de Santiago de Chile, Chile

10:20–10:50  Mid-morning refreshments

Session 10A  Value from Industry Waste: L. van Dyk
10:50–11:15  Recovery of Uranium from Nuclear Conversion
Plant Waste
              M. Potgieter, J.C. Barry, D.J. van der Westhuizen, and
H.M. Krieg, NECSA and North-West University, South Africa

11:15–11:40  Processing of waste lithium ion batteries to recover
cobalt as a valuable product
              M.K. Jha, S.K. Sahu and V.K. Jha, CSIR-National Metallurgical Laboratory and ADV Metal Combine Pvt. Ltd, India (Presentation only)

11:40–12:05  Continued Development of the BIOX®, ASTER® and
HiTeCC Processes
              J. van Niekerk, W. Olivier, C. van Buuren and T. Ritasalo, Outotec, South Africa and, Finland

12:05–12:30  An investigation into the effect of Fe(III)
concentration of the product characteristics of
Fe(III) oxyhydroxide precipitates from acid mine
drainage and bio-hydrometallurgical wastewater
              C. Mangunda, J. Petersen and A. Lewis, University of Cape Town, South Africa (Presentation only)

12:30–13:30  Lunch

Session 10B  Leaching: T. Ojumu
10:50–11:15  Investigation of leach phenomena in large particles
during heap leaching using X-ray Computed Tomography
              R. Ram, J. Petersen, M. Becker and D. Bradshaw, University of Cape Town, South Africa (Presentation only)

11:15–11:40  A Kinetic Study of the Leaching of Chalcopyrite in
Ammonia-Ammonium Sulphate Solutions
              T. Moyo and J. Petersen, University of Cape Town, South Africa

11:40–12:05  Mitigation of the Process Dysfunctions Related to the
Presence of Talcaeous Minerals in the Feed to a
Copper Hydrometallurgical Plant Operating in
Katanga, DR Congo
              L.M. Shengo, P. Kabwika, M.J. Matepa, C.W.N.Mutiti and
J.-L.M. Mulumba, University of Lubumbashi and Mutantanda Mining Sprl, Kolwezi, DRC

12:05–13:30  Bioleaching of a Polymetallic Sulphide Ore from
Capillitas (Argentina)
              P. Chiacchiarini, L. Surin, A. Ferrando, C. Cordero and A.
Giaveno, Universidad Nacional del Comahue and PROBIEN (CONICET-UNCo), Universidad Nacional del Comahue, Argentina

12:30–13:30  Lunch