ARTICLES APPROVED
68 articles approved as of August 30, 2016

Represented Countries (16): Brazil, Chile, Australia, Canada, Germany, Austria, UK, USA, Malaysia, France, Switzerland, Peru, Sweden, Laos, Finland, and The Netherlands

Plenary Presentations (05)

The Next Big Thing
Peter Amelunxen, President, Aminpro, Peru

Title TBC
Edgardo Tapia, Plant Manager, Carmen de Andacollo, Teck, Chile

Mine-To-Plant Strategies within the Cyclic Copper Business
Jorge Menacho, General Manager, De Re Metallica Ingeniería, Chile

Title TBC
Nicolás Cruz, Geometallurgy Manager, Anglo American, Chile

Title TBC
Carlos Jara, Metallurgy Manager, Cía. Minera Doña Inés de Collahuasi, Chile

Poster Presentations (02 articles)

(A07) From Kinematic Models to Fragmentation Prediction on Block Caving Mines: Modeling Phase
René Gómez, Universidad de Concepción, Chile

(A81) Characterization of Particulate Matter Emitted during the Primary Crushing Simulation and their Relationship with Geological Units
Javiera Gerding, Centro de Estudios Mineralógicos, GeoAtacama, Chile; Óscar Jerez, Universidad de Concepción, Chile

Comminution: Crushing, Grinding and HPGR (14 articles)

(A24) More than an Alternative? Shell supported Ball Mills in Mega Comminution Plants
Christian Nieland and Egbert Burchardt, Thyssenkrupp Resource Technology, Germany; Alexander Baumbach, Thyssenkrupp Industrial Solutions, Chile

(A26) Mitigating the Impact of Sea Water on Copper Flotation Response through Optimizing Grinding Chemistry
Jessica Kinal and Simon Jacques, Magotteaux Andino, Chile; Christopher Greet, Magotteaux, Australia

(A35) A Public Database of Tumbling Mill Grindability Measurements and their Relationships
Alex Doll, Alex G. Doll Consulting, Canada

(A36) Estimation of Load Level in Industrial SAG Mills Using the Onmill System
Hernán Robles and Tania Ledeza, Netos, Chile; Luis Vinnett and Jorge Pontt, Universidad Técnica Federico Santa María, Chile

(A39) The Development of SGI Test at El Soldado
Miguel Becerra and Francisca Jorquera, Anglo American El Soldado, Chile

(A42) Single Stage SAG Circuit at El Soldado
Miguel Becerra and Francisco Vicuña, Anglo American El Soldado, Chile

(A52) Advanced Crusher Control Strategy Using Model Based Predictive Controller
Tomás Carricajo and Juan Morales, ANDRITZ, Chile; Freddy Gómez, César Garrido and Marcelo Jara, Cía. Minera Doña Inés de Collahuasi, Chile

(A61) Energy and Throughput Optimization for Fine Grinding in Stirred Media Mills
Ilesh Shah, FLSmidth, USA

(A62) Debottlenecking of Secondary Grinding Circuit: An Hydraulic Analysis over the Process Results
Claudio Muñoz, Cía. Minera Doña Inés de Collahuasi, Chile

(A64) The Effect of Key Operating Conditions on Grinding Media Consumption in Semiautogenous Mills
Levi Guzmán, Moly-Cop, Perú; Jaime Sepúlveda, J Consultores, Chile

(A73) Mine-to-Plant Commissioning in Salobo Mine
Jair Alarcón, Orica, Chile; Ronaldo Fonseca, Vale, Brazil; Grazielle Gontijo and Stephen Jeric, Orica, Brazil

(A79) The Role of HPGR in Dry Minerals Processing Circuits
Frank van der Meer, Weir Minerals, Chile; Ricardo Ramírez; Weir Minerals, The Netherlands

(A86) Multiple Concentrator Survey of Real-Time Individual Cyclone Particle Size Tracking
Christian O’Keefe, Robert Maron, Dylan Cirulis and Juan Francisco Medina, CiDRA Minerals Processing, USA

(A04) Upgrade of Hydraulic Adjustment System of Symons 7’ Crusher
Nelson Mella, Alejandra Pereda, Iván Araya, Maria Luan, Alexis Guerra and Sebastián Villalobos, Metso, Chile

Concentration Plant Management and Operation (6 articles)

Yousef Ghorbani, Rob Tizpatrick, Melanie kinchington and Gavyn Rollinson, University of Exeter, United Kingdom

(A28) Metal Accounting: The Core Responsibility of Process Engineers
Manuel González, Caspeo, Chile; Stephane Brochot and Lorenzo Cappai, Caspeo, France; Pierre Vix, Glencore, Switzerland

(A37) A Review of the Options in Concentrator Layout
Greg Lane, Bianca Foggiatto, Phil Dakin and Andrew Tew, Ausenco, Australia

(A53) Improving Advanced Control for Better Mineral Throughput, Size Classification and Cu Recovery
Tomás Carricajo, ANDRITZ, Chile; Daniel Silva, Minera Los Pelambres, Chile; Bill Gough, ANDRITZ, Canada; Andrés...
(A76) Benefits in Comminution Applying High Energy Blasting in Hard Ore Zones
Egonk Arriagada, Renzo Dávila and Stephen Jeric, Orica, Chile

(A82) Measuring and Utilizing Ore Quality Variability Using Real Time On-Belt Elemental Analysis to Improve Mill Feed Quality
Óscar Vasquez and Henry Kurth, Scantech, Australia

Flotation: Fundamentals and Practical Applications (23 articles)

(A11) Adsorption and Flotation Response of the *Rhodococcus Erythropolis* Bacteria to Hematite
Carlos Castañeda, Antonio Gutiérrez, Jhonatan Soto and Mauricio Torem, Pontificia Universidad Católica do Rio de Janeiro, Brazil

(A12) Bioflotation of Dolomite and Calcite Using *Rhodococcus Opacus* Strain
Vitor Coelho, Mauricio Torem, R. Rojas, A. Merma, Pontificia Universidad Católica do Rio de Janeiro, Brazil

(A14) Investigation of Uncertainties as an Indicator for Process Evaluation in the Recovery Stages of the Flotation Circuit
Marcelo Montenegro, CICITEM, Chile; Glenn Araya and Manuel Leiva, Universidad de Antofagasta, Chile; Yousef Ghorbani, University of Exeter, UK

(A15) Typical Reproducibility of Metal Balances in Flotation Plants
Luc Lachance and Donald Leroux, Triple Point Technology, Canada

(A21) Fundamental Aspects of Hematite Fines Electroflotation Using the Bacterial Strain of R. Opacus as Bioreagent
R.H. Rojas, Mauricio Torem, Vitor Coelho and A.G. Merma, Pontifical Catholic University of Rio de Janeiro, Brazil

(A22) Continuous, Real Time Pulp Chemistry Measurements and what They Tell Us about Metallurgical Performance
Christopher Greet and Kyle Selga, Magotteaux, Australia

(A30) Improving Image Analysis of Online Bubble Size Measurements with Enhanced Algorithms
Claudio Acuña and Luis Vinnett, CASIM, Universidad Técnica Federico Santa María, Chile; Seng How Kuan, Universiti Tunku Abdul Rahman, Malasia

(A32) Enhancing the Performance of Cu-Mo Circuits using the Jameson Cell
Virginia Lawson, Glencore Technology, Australia

(A38) Determination of Collector Affinity for Flotation of Sulfide Minerals
Gabriela Gioia, Jocelyn Quinteros and Robinson Constanzo, Pontificia Universidad Católica de Valparaíso, Chile; Eduardo Enriquez and Nefer Valenzuela, Clariant, Chile

(A41) Slag Flotation at El Soldado
Miguel Becerra and Jaime Zúñiga, Anglo American El Soldado, Chile
(A43) Advances in Flotation Chemistry: Xanthate Alternative Products
Nefer Valenzuela and Juan Román, Clarient, Chile; Jacques Bezuidenhout, Clarient, Germany

(A45) Humic Substances for the Flotation of Sulfide Minerals: Chronology and Recent Developments
César Sáez and Rosanna Ginocchio, Pontificia Universidad Católica de Chile

(A48) Interactions between Kaolinite and Molybdenite in Fresh and Seawater
Leopoldo Gutiérrez, Andrés Ramírez and Gastón Avilés, Universidad de Concepción, Chile

(A49) Use of Blending to Optimize the Flotation Process of High Clay Ores
Leopoldo Gutiérrez, Jaime Álvarez, Sonia Helle, Úrsula Kelm, Marcos Pincheira and Óscar Jerez, Universidad de Concepción, Chile

(A50) Electrochemical Behavior of Pyrite in Fresh Water and Seawater
Eugenia Araneda, Leopoldo Gutierrez and Romy Hausdorf, Universidad de Concepción, Chile

(A57) Program of Continuous Standard Tests in Mini-Pilot Flotation Plant (MPP): SGS Chile
Pablo León, Mario Basaure and Juan Reyes, SGS Minerals, Chile

(A60) Hematite Flotation Using a Crude Biosurfactant Extracted from a Gram Positive Bacteria
Jhonatan Puelles, Antonio Merma and Mauricio Torem, Pontificia Universidade Católica do Rio de Janeiro, Brazil

(A67) Improved Flotation Performance through Modernization with Outotec Forced Air Technology
Chris Cruickshank, Koen Aberkrom and Miika Tirkkonen, Outotec, Finland; Alejandro Yáñez, Outotec, Chile

(A68) In-Situ Gas Holdup Sensor for Industrial Flotation Machines
Miguel Maldonado and P. Olivares, Universidad Santiago de Chile; César Gómez, McGill University, Canada

(A69) Use of Depressant BK-511 in Selective Flotation of Molybdenite, Andina Division, Codelco
Mauricio Bustamante and Héctor Tobar, Andina Division, Codelco, Chile

(A74) Modeling H2S Gas Generation in Copper/Molybdenum Flotation Cells
Humberto Estay, Karina Gonzalez and Rodrigo Kong, Arcadis, Chile

(A80) On the Interaction Effect between Xanthate Collector, Frothers and Solids: A Laboratory Characterization of Sulfide Flotation
Álvaro Videla and Ignacio Molina, Pontificia Universidad Católica de Chile; Paulo Martin, Dow Chemicals Company, Brazil

(A90) Inferring Gangue Entrainment from Conductivity Measurements at the Top of the Froth
Rodrigo Araya, Dalton Major, Brigitte Lacouture, Teck Red Dog Mine, USA; César Gómez and Kristian Waters, McGill University, Canada

| Lab-Scale Metallurgical Tests for Process Control | (6 articles) |

(A20) On the Capacity to Predict Metallurgical Indexes from the Mineralogy, Particle Size and Operating Conditions at Batch Scale
Felipe Contreras, Minera Los Pelambres, Chile; Juan Yianatos, Luis Bergh, Luis Vinnett, Isabel Panire, Universidad Técnica Federico Santa María, Chile

(A63) A Comparison from Pilot Test to Industrial Result: Implementation of Pneumatic Technology in a Selective Molybdenum Flotation Plant
Claudio Muñoz, Patricia Veliz and Egidio Catalán, Cía. Minera Doña Inés de Collahuasi, Chile; Heinrich Sprenger, Maelgwyn Mineral Services, Chile

(A66) Predicting the Energy Requirements of High Pressure Grinding Rolls Using Piston Press Test Procedures
Zorigt khuu Davaanyam, Bern Klein, Stefan Nadolski and Amit Kumar, University of British Columbia, Canada

(A77) Jameson Cell Project Evaluation in the Circuit Cleaner at Codelco Andina
Eduardo Morin, Andina Division, Codelco, Chile; Virginia Lawson, Glencore Technology, Australia

(A88) Characterization of Laboratory Crushing Tests with Chuquicamata Underground Mine Samples
Bruno Merelo and Álvaro Videla, Pontificia Universidad Católica de Chile; Edisson Pizarro, Chuquicamata Division, Codelco, Chile; Jaime Sepúlveda, J Consultores, Chile

(A91) Bubble Surface Area Flux Measurement in Laboratory Flotation Cells: Two- and Three-Phase Operation
Jaime Álvarez and Cesar Gómez, Universidad de Concepción, Chile

Modeling, Simulation and Design of Mineral Processes (7 articles)

(A08) How to Avoid Errors in HPGR Product Characterization
Felix Heinicke, Harald Günter, Köppern Aufbereitungstechnik, Germany; Andre Kamptner, UVR-GIA, Germany

(A09) Simulation of the Flotation Process in a Hybrid Cell with the OpenFOAM CFD Framework
Gerhard Holzinger, K1MET GmbH, Austria; Stefan Pirker, Johannes Kepler University Linz, Austria; Lukas Petzold, Primetals Technology, Austria

(A40) Comparative Analysis of Grinding Efficiency and Classifications Curves using JKSimmet
Miguel Becerra, Anglo American El Soldado, Chile

(A46) Reduction and Fracture Analysis of Tungsten Ore and its use for Fundamental Liberation Modeling
Lorena Guldris, Magnus Bengtsson and Magnus Evertsson, Chalmers University of Technology, Sweden

(A56) Geometallurgical Models, their Interaction with Plant Models and the Importance of Final Reconciliation
Francisco Soto, Javier Pizarro and Romke Kuyvenhoven, Empírica Consultores, Chile; Orlando Rojas, GeoEstima, Chile

(A84) Analysis of Autoregressive Model with Exogenous Variables to Predict the C.E.E. SAG Mill as a Geometallurgical Answer of Porphyry Copper Deposits
Nicolás Miranda, Andina Division, Codelco, Chile; Antonio Candia, Universidad de Concepción, Chile

(A85) Process Development for the Mina Justa Project
Ian Ritchie and Daniel Yataco, Marcobre, Peru; Adam Johnston, Transmin, Peru
New Processing Technologies (5 articles)

(A06) Current Developments in Preconcentration Using Dense Media Separation
Mauritz Lundt, Sepro Mineral Systems; Ish Grewal, Met-Solve Labs, Canada

(A17) Managing Uncertainty in a Grade Engineering® Industrial Pilot Trial
Cristian Carrasco and L. Keeney, CRC ORE, Australia; Francois-Bongarcon, AGORATEK International Consultants, Canada

(A27) Beneficiation of Industrial Minerals using a Tribo-Electric Belt Separator
Paul Miranda, F. Hrach and K. Flynn, ST Equipment and Technology, USA

(A83) An Innovative Approach to Operational Applications of Process Mineralogy
Eddy Hill and Benjamin Tordoff, Zeiss, United Kingdom; Will Goodall, iMin Solutions, Australia

(A87) Smart Wireless Solutions: Process Control and Variables Monitoring in a Leach Pad Operation
Hugo Barrientos, Emerson Process Management, Chile

Water Resources Optimization and Tailings Management (2 articles)

(A29) Effect of Seawater on Solid-Liquid Separation and Transport Properties of Magnetite Tailings
Matías Álvarez, C. Ihle, W. Kracht and C. Reyes, Universidad de Chile

(A47) Use of Seawater in Copper Mines in Chile: Challenges and Opportunities
Macarena Terroba, Pablo Mardones and José Adriasola, Bechtel, Chile; Rubén Muñoz, IDE Technologies, Chile

Smelting (1 abstract)

(A58) Quantifying the Effect of Liquids Returns and Alternative Treatment of Returns Type oxides in Teniente Converters
Piero Tardón, Codelco, El Teniente Division, Chile; Cynthia Rodríguez, Universidad de Santiago de Chile

ABSTRACT DISTRIBUTION

Mining Companies (16 articles)

El Teniente Division, Codelco, Chile (1)
Vale, Brazil (1)
Minera Los Pelambres, Chile (2)
Anglo American El Soldado, Chile (4)
Cia. Minera Doña Inés de Collahuasi, Chile (3)
Andina Division, Codelco, Chile (3)
Marcobre, Peru (1)
Teck Red Dog Mine, USA (1)
### Engineering and Consulting Companies (8 articles)

- Alex G. Doll Consulting, Canada (1)
- Ausenco, Australia (1)
- Bechtel, Chile (1)
- Empírica Consultores, Chile (1)
- SGS Minerals, Chile (1)
- Arcadis, Chile (1)
- Aminpro, Peru (1)
- De Re Metallica Ingeniería, Chile (1)

### Supplier Companies (21 articles)

- Magotteaux, Australia (1)
- Sepro Mineral Systems, Canada (1)
- Koppern Aufbereitungstechnik, Germany (1)
- Triple Point Technology, Canada (1)
- Thyssenkrupp Resource Technology, Germany (1)
- Magotteaux Andino, Chile (1)
- ST Equipment and Technology, USA (1)
- Caspeo, Chile (1)
- Glencore Technology, Australia (1)
- Netos, Chile (1)
- Clariant, Chile (1)
- FLSmidth, USA (1)
- Moly-Cop, Peru (1)
- Outotec, Finland (1)
- Orica, Chile (1)
- Weir Minerals, The Netherlands (1)
- Scantech, Australia (1)
- Zeiss, United Kingdom (1)
- CiDRA Minerals Processing, USA (1)
- Emerson Process Management, Chile (1)
- Metso, Chile (1)
- UVR-FIA GmbH, Germany
- Primetals Technology, Austria

### Universities and Research Centers (23 articles)

- Universidad de Concepción, Chile (5)
- Centro de Estudios Mineralógicos, GeoAtacama, Chile (1)
- K1MET GmbH, Austria (1)
- Pontificia Universidad Católica do Rio de Janeiro, Brazil (4)
- CICITEM, Chile (1)
- CRC-ORE, Australia (1)
- University of Exeter, United Kingdom (1)
- Universidad de Chile (1)
- CASIM, Universidad Técnica Federico Santa María (1)
Pontificia Universidad Católica de Valparaíso, Chile (1)
Pontificia Universidad Católica de Chile (3)
Chalmers University of Technology, Sweden (1)
University of British Columbia, Canada (1)
Universidad Santiago de Chile (1)
Johannes Kepler University, Austria
Universidade de Sao Paulo, Brazil
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Universidad Técnica Federico Santa María, Chile