CIM BULLETIN

September-October 2005

Successful energy management, p. 74
D. Berkley

The 1/9th Rule – An assessment of the valuation and structure of Canadian exploration agreements, p. 75
L. Kilburn

Using Simul8 to model underground hard rock mining operations, p. 76
N. Vayenas and G. Yuriy

Truck-shovel optimization accounting for cost, safety, and operational practice, p. 77
C.O. Aksoy, H. Kose, T. Malli, K. Ozfirat, A. Gonen, and S. Gurgen

Designing lanterns for the efficient lighting of mine roadways, p. 78
M. Aruna, Y.V. Rao, and N.C. Karmakar

November 2005

Imaging steeply dipping near-surface mine workings using surface seismic waves, p. 87
S.D. Butt, C. Xu, M.D. Vance, and G.C. Corbett

Starting Koala North – North America’s first underground diamond mine, p. 88
P. Harvey

Long-term planning of an underground mine using mixed-integer linear programming, p. 89
G. McIsaac

Process development by Dynatec for the Ambatovy Nickel Project, p. 90

February 2006

Hydroseparation: a new development in process mineralogy of platinum-bearing ores
L.J. Cabri, N.S. Rudashevsky, V.N. Rudashevsky, and R. Lastra

Gravity improvements at the Porcupine Joint Venture

Elasticity solution of a fully grouted rockbolt
B. Ferdowsi, S.J. Fariborz, K. Najm, and F. Hassani

Geology and geochemistry of the Águas Claras and Pico Iron mines, Iron Quadrangle, Minas Gerais, Brazil
C.A. Spier, S.M. Barros de Oliveira, and C.A. Rosière

Statistical analysis of occupational accidents in the Turkish cement industry
S. Gürgen

INTERNATIONAL JOURNAL OF ROCK MECHANICS AND MINING SCIENCES
Prediction and prevention of sandstone-gas outbursts in coal mines • ARTICLE Pages 2-18 Xiao-Zhao Li and An-Zeng Hua

ISRM Suggested Method for determining the Shore Hardness value for rock • ARTICLE Pages 19-22 R. Altindag and A. Güney

A fully-coupled hydrological–mechanical–chemical model for fracture sealing and preferential opening • ARTICLE, Pages 23-36 Jishan Liu, Jinchang Sheng, A. Polak, D. Elsworth, H. Yasuhara and A. Grader

Improved routine estimation of the minimum horizontal stress component from extended leak-off tests • ARTICLE, Pages 37-48 A.M. Raaen, P. Horsrud, H. Kjørholt and D. Økland

Analysis of fracture propagation behavior using hydraulically induced acoustic emissions in the Bernburg salt mine, Germany • ARTICLE, Pages 49-57 H. Moriya, T. Fujita, H. Niitsuma, J. Eisenblätter and G. Manthei

Canonical ridge correlation of mechanical and engineering index properties • ARTICLE Pages 58-65 A.E. Tercan and Y. Ozcelik

Determination of stress fields in the elastic lithosphere by methods based on stress orientations • ARTICLE, Pages 66-88 Sh. A. Mukhamediev, A.N. Galybin and B.H.G. Brady

Numerical simulation of shear-induced flow anisotropy and scale-dependent aperture and transmissivity evolution of rock fracture replicas • ARTICLE, Pages 89-106 T. Koyama, N. Fardin, L. Jing and O. Stephansson

New developments in the Integrated Stress Determination Method and their application to rock stress data at the Åspö HRL, Sweden • ARTICLE, Pages 107-126 D. Ask

Measurement-related uncertainties in overcoring data at the Åspö HRL, Sweden. Part 2: Biaxial tests of CSIRO HI overcore samples • ARTICLE, Pages 127-138 D. Ask

Dominant rock properties affecting the performance of conical picks and the comparison of some experimental and theoretical results • ARTICLE, Pages 139-156

Technical note
Sawability prediction of carbonate rocks from shear strength parameters using artificial neural networks • SHORT COMMUNICATION, Pages 157-164 S. Kahraman, H. Altun, B.S. Tezekici and M. Fener

Determining the stress and convergence at Beypazari trona field by three-dimensional elastic–plastic finite element analysis: A case study • ARTICLE, Pages 166-178 C.O. Aksoy, T. Onargan, H. Yenice, K. Kucuk and H. Kose

Determination of rock mass deformation modulus by means of traveling load tests—Part I: Theory of the traveling load test in an open pit • ARTICLE, Pages 179-191 K. Sugawara, L. Faramarzi and N. Nakamura

Determination of rock mass deformation modulus by means of Traveling Load Tests—Part II: Traveling Load Test practice in an open pit • ARTICLE, Pages 192-202 K. Sugawara, L. Faramarzi and N. Nakamura
Empirical estimation of rock mass modulus • ARTICLE, Pages 203-215 E. Hoek and M.S. Diederichs


Estimation of rock modulus: For intact rocks with an artificial neural network and for rock masses with a new empirical equation • ARTICLE, Pages 224-235 H. Sonmez, C. Gokceoglu, H.A. Nefeslioglu and A. Kayabasi

Numerical simulation of Brazilian disk rock failure under static and dynamic loading • ARTICLE, Pages 236-252 W.C. Zhu and C.A. Tang

An application of fuzzy sets to the Diggability Index Rating Method for surface mine equipment selection • ARTICLE, Pages 253-266 M. Iphar and R.M. Goktan

The foundation of a 40-storey tower in jointed basalt • ARTICLE, Pages 267-281 J.L. Justo, E. Justo, P. Durand and J.M. Azañón

An experimental study on creep of welded tuff • ARTICLE, Pages 282-291 L. Ma and J.J.K. Daemen

Shear banding in drained and undrained triaxial tests on a saturated sandstone: Porosity and permeability evolution • ARTICLE, Pages 292-310, J. Sulem and H. Ouffroukh

Technical Notes

A note on the oscillating flow method for measuring rock permeability • SHORT COMMUNICATION, Pages 317-320 T. Hirono, W. Lin and S. Nakashima

The influence of steel stylus hardness on the Cerchar abrasiveness index value • SHORT COMMUNICATION, Pages 321-327 T.N. Michalakopoulos, V.G. Anagnostou, M.E. Bassanou and G.N. Panagiotou

Rock variability and establishing confining pressure levels for triaxial tests on rocks • SHORT COMMUNICATION, Pages 328-335 M. Sari and C. Karpuz


ISRM Suggested Methods for borehole geophysics in rock engineering • ARTICLE Pages 337-368 T. Takahashi, T. Takeuchi and K. Sassa

Influence of geotechnical factors on gas flow experienced in a UK longwall coal mine panel • ARTICLE, Pages 369-387 D.N. Whittles, I.S. Lowndes, S.W. Kingman, C. Yates and S. Jobling

Modelling of the drying and flooding of underground iron mines in Lorraine (France) • ARTICLE, Pages 388-407 D. Grgic, F. Homand and A. Giraud

Applications of numerical limit analysis (NLA) to stability problems of rock and soil masses • ARTICLE, Pages 408-425 A.F. Durand, E.A. Vargas Jr. and L.E. Vaz
Two-scale modeling of jointed rock masses • ARTICLE, Pages 426-436 Jeen-Shang Lin and Cheng-Yu Ku

Sub-critical crack growth in anisotropic rock • ARTICLE, Pages 437-453 Y. Nara and K. Kaneko

Reliability of numerical modelling predictions • ARTICLE Pages 454-472, T.D. Wiles

Precursors for rock fracturing and failure—Part I: IRR image abnormalities • ARTICLE Pages 473-482, Lixin Wu, Shanjun Liu, Yuhua Wu and Chuanyin Wang

Precursors for rock fracturing and failure—Part II: IRR T-Curve abnormalities • ARTICLE, Pages 483-493 Lixin Wu, Shanjun Liu, Yuhua Wu and Chuanyin Wang

Technical note

Influence of petrographic constituents on the softening characteristics of Coal Measures rocks • SHORT COMMUNICATION Pages 494-502 A.K. Ray, G.S.P. Singh and G. Banerjee

Vol.18, Iss.15, P.1349-1424 (December 2005)

The use of air tabling and triboelectric separation for separating a mixture of three plastics • ARTICLE, Pages 1350-1360 G. Dodibia, J. Sadaki, K. Okaya, A. Shibayama and T. Fujita

Effect of carbon coatings on gold dissolution in the presence of sulphide and lead • ARTICLE, Pages 1361-1372, H. Tan, D. Feng, G.C. Lukey and J.S.J. van Deventer

Interfacial studies of liquid sulphur during aqueous pressure oxidation of nickel sulphide • ARTICLE, Pages 1378-1385 James A. Brown and Vladimiro G. Papangelakis

Discrete element method (DEM) modelling of evolving mill liner profiles due to wear. Part I: DEM validation • ARTICLE, Pages 1386-1391, Johnny T. Kalala, Murray M. Bwalya and Michael H. Moys

Discrete element method (DEM) modelling of evolving mill liner profiles due to wear. Part II. Industrial case study • ARTICLE Pages 1392-1397, J.T. Kalala, M. Bwalya and M.H. Moys

Influence of aggregate stemming in blasting on the SAG mill performance • ARTICLE Pages 1398-1404, T. Kojovic

Particle bed charge decay behaviour under high tension roll separation • ARTICLE Pages 1405-1411, M. Ziemski and P.N Holtham

Application of image processing and radial basis neural network techniques for ore sorting and ore classification • ARTICLE Pages 1412-1420, Veerendra Singh and S. Mohan Rao

Technical Note

Bio-leaching of valuable metals from marine nodules under anaerobic condition • SHORT COMMUNICATION, Pages 1421-1422 Haoran Li, Yali Feng, Shouci Lu and Zhuwei Du

Vol.19, Iss.1, P.1-104 (January 2006)

Effect of cuprous cyanide, dry and wet milling on the selective flotation of galena and sphalerite • ARTICLE, Pages 1-11 M.D. Seke and P.C. Pistorius
Maximum bubble loads: Experimental measurement vs. analytical estimation • ARTICLE, Pages 12-18, P.M. Gallegos-Acevedo, R. Pérez-Garibay and A. Uribe-Salas

Preventing oxidation of iron sulfide minerals by polyethylene polyamines • ARTICLE Pages 19-27, Yu-Wei Chen, Yuerong Li, Mei-Fang Cai, Nelson Belzile and Zhi Dang

Effect of polyphosphate and naphthalene sulfonate formaldehyde condensate on the rheological properties of dewatered tailings and cemented paste backfill • ARTICLE Pages 28-36, L. Huynh, D.A. Beattie, D. Fornasiero and J. Ralston

Liquid axial dispersion and holdup in column leaching • ARTICLE, Pages 37-47, L.R.P. de Andrade Lima

Amine–oleate interactions in feldspar flotation • ARTICLE, Pages 48-55, E.C. Orhan and İ. Bayraktar

Treatment of pyritic matrix gold–silver refractory ores by ozonization–cyanidation • ARTICLE, Pages 56-61, E. Elorza-Rodriguez, F. Nava-Alonso, J. Jara and C. Lara-Valenzuela

Adsorption of dithiophosphate and dithiophosphinate on chalcopyrite • ARTICLE, Pages 62-71, Taki Güler, Cahit Hiçyılmaz, Gülsün Gökçaç and Zafir Ekmekçi

Coal reverse flotation. Part I: Separation of a mixture of subbituminous coal and gangue minerals • ARTICLE, Pages 72-78, Kejian Ding and Janusz S. Laskowski

Coal reverse flotation. Part II: Cleaning of a subbituminous coal • ARTICLE, Pages 79-86 Kejian Ding and Janusz S. Laskowski

Decolorizing dye wastewater from the agate industry with Fenton oxidation process • SHORT COMMUNICATION, Pages 87-90 A.L. Barros, T.M. Pizzolato, E. Carissimi and I.A.H. Schneider

The effects of grinding media shape on breakage rate • SHORT COMMUNICATION Pages 91-93, H. Ipek

Research on the recycling of valuable metals in spent Al2O3-based catalyst • SHORT COMMUNICATION, Pages 94-97 Yun Chen, Qiming Feng, Yanhai Shao, Guofan Zhang, Leming Ou and Yiping Lu

Combined application of different collectors in the flotation concentration of Turkish feldspars • SHORT COMMUNICATION Pages 98-101, O. Bayat, V. Arslan and Y. Cebeci

Volume 19, Issue 2, Pages 105-210 (February 2006)

Heavy metal removal mechanism of acid mine drainage in wetlands: A critical review • REVIEW ARTICLE, Pages 105-116 A.S. Sheoran and V. Sheoran

Cyanide oxidation by ozone in a steady-state flow bubble column • ARTICLE Pages 117-122, F. Barriga-Ordonez, F. Nava-Alonso and A. Uribe-Salas

Selective leaching of a copper ore by an electromembrane process using ammonia solutions • ARTICLE, Pages 123-129 Nassila Sabba and Djamal-Eddine Akretche

High pressure grinding rolls (HPGR) applications in the cement industry • ARTICLE, Pages 130-139, Namik A. Aydoğan, Levent Ergün and Hakan Benzer

An investigation into the feasibility of recovering valuable metals from solid oxide compounds by gas phase extraction in a fluidised bed • ARTICLE, Pages 140-146 J.H. Potgieter, M.A. Kabemba, A. Teodorovic, S.S. Potgieter-Vermaak and W.G. Augustyn

Adsorption of polysaccharide onto talc • ARTICLE, Pages 147-153, Gushan Liu,
Qiming Feng, Leming Ou, Yiping Lu and Guofan Zhang

Some remarks on the reactor network synthesis for gold cyanidation • ARTICLE
Pages 154-161, L.R.P. de Andrade Lima

Particle size classification in a fluidized bed containing parallel inclined plates • ARTICLE, Pages 162-171
E. Dorooodchi, J. Zhou, D.F. Fletcher and K.P. Galvin

The role of copper and lead in the activation of pyrite in xanthate and non-xanthate systems • ARTICLE, Pages 172-179
E.T. Pecina, A. Uribe, F. Nava and J.A. Finch

Nickel solids concentration distribution in a stirred tank • ARTICLE, Pages 180-189
Aoyi Ochieng and Alison E. Lewis

High-density-infrared (HDI) treatment of mineral processing equipment for enhanced wear resistance • ARTICLE, Pages 190-196
D. Tao, C. Blue, N.B. Dahotre, R. Honaker, B.K. Parekh, P.G. Engleman, C. Zhao and H. Han

Technical notes

The effect of cadmium ion on cobalt removal from zinc sulfate solution • SHORT COMMUNICATION
Pages 197-200
Guisheng Zeng, Gang Xie, Dajin Yang, Jikun Wang, Xia Li and Rongxing Li

Bubble size as a function of impeller speed in a self-aeration laboratory flotation cell • SHORT COMMUNICATION
Pages 201-203
E.H. Girgin, S. Do, C.O. Gomez and J.A. Finch

Copper(II) sulfide? • SHORT COMMUNICATION
Pages 204-208
Siew Wei Goh, Alan N. Buckley and Robert N. Lamb

Recovery of copper from melting furnaces dust by microorganisms • SHORT COMMUNICATION
Pages 209-210
M. Oliazadeh, M. Massinaie, A. Seyed Bagheri and A.R. Shahverdi

Volume 19, Issue 3, Pages 211-338 (March 2006)
Selected papers from Pyrometallurgy ’05, Cape Town, South Africa, March 2005

Iron redox-equilibria and sulphide capacity of PGM melter-type slags • ARTICLE
Pages 212-218

Integrating pyrometallurgy and robotic systems engineering: Fully automated fire assay laboratory for rapid PGE analysis • ARTICLE
Pages 219-231
K.S. McIntosh, D. Auer, K.R. Koch and J.J. Eksteen

Oxidation of high-titanium slags in the presence of water vapour • ARTICLE
Pages 232-236, P. Chris Pistorius and Tebogo Motlhamme

Physical modelling of slag foaming in two-phase and three-phase systems in the churn-flow regime • ARTICLE, Pages 237-245, S.A.C. Stadler, J.J. Eksteen and C. Aldrich

Mineralogical characterisation of Secunda gasifier feedstock and coarse ash • ARTICLE, Pages 256-261 R.H. Matjie, C. van Alphen and P.C. Pistorius

Modelling of an ilmenite-smelting DC arc furnace process • ARTICLE, Pages 262-
279, Johan H. Zietsman and P. Chris Pistorius

Understanding the influence of acidic components (Si, Al, and Ti) on ash flow temperature of South African coal sources • ARTICLE, Pages 280-286, J.C. van Dyk

Online optimization of a low pressure, high temperature oxidation refractory ore treatment plant • ARTICLE, Pages 287-298

Andrew I. Collins, Dirk Danninger, Rene Fernandez, Michael Keaton and John Keenan

Modelling of aluminium scrap melting in a rotary furnace • ARTICLE, Pages 299-308

B. Zhou, Y. Yang, M.A. Reuter and U.M.J. Boin

A dynamic-CFD hybrid model of a submerged arc furnace for phosphorus production • ARTICLE, Pages 309-317

E. Scheepers, Y. Yang, M.A. Reuter and A.T. Adema

The reduction of chromite in the presence of silica flux • ARTICLE, Pages 318-324

Peter Weber and R. Hurman Eric

Twin-electrode DC smelting furnaces—Theory and photographic testwork • ARTICLE, Pages 325-333, Q.G. Reynolds and R.T. Jones

Technical note

Solid state reduction of a natural ilmenite • SHORT COMMUNICATION, Pages 334-337

C.S. Kucukkaragoz and R.H. Eric

Volume 19, Issue 4, Pages 339-378

(April 2006)

Selected papers from Processing of Industrial Minerals '05

Larox

Mechanical activation of olivine • ARTICLE

Pages 340-347, R.A. Kleiv and M. Thornhill

Biological, chemical and electromagnetic treatment of three types of feldspar raw materials • ARTICLE, Pages 348-354

Iveta Štyriaková, Igor Štyriak, Pavol Malachovský and Michal Lovás

Product quality improvement of Brazilian impure marble • ARTICLE, Pages 355-363

J.J. Varela, C.O. Petter and H. Wotruba

Slow release boron micronutrients from pelletized borates of the northwest of Argentina • SHORT COMMUNICATION

Pages 364-367, H.R. Flores, L.E. Mattenella and L.H. Kwok

Beneficiation of colemanite tailings by attrition and flotation • SHORT COMMUNICATION, Pages 368-369

A. Gül, Y. Kaytaz and G. Önal

An alternative mineral in the glass and ceramic industry: Nepheline syenite • SHORT COMMUNICATION,Pages 370-371

Firat Burat, Olgaç Kangal and Guven Onal

The effect of micro-grinding and micro-graphite flotation to upgrade the quality of calcite concentrate, with reference to Kurikka calcite marble deposit, Finland • SHORT COMMUNICATION, Pages 372-375

Tegist Chernet, Mervi Wiik, Harri Lehto, Jukka Reinikainen and Janne Vuori

A new industrial mineral: Huntite and its recovery • SHORT COMMUNICATION

Pages 376-378, Olgaç Kangal and Ali Güney

Volume 19, Issue 5, Pages 379-528

(April 2006)

Selected papers from Processing and Disposal of Minerals Industry Wastes '05

Larox
Biosorption of cadmium by green coconut shell powder • ARTICLE, Pages 380-387
Gabriela Huamán Pino, Luciana Maria Souza de Mesquita, Mauricio Leonardo Torem and Gustavo Adolfo Saavedra Pinto

Copper electrowinning from gold plant waste streams • ARTICLE, Pages 388-398
F.A. Lemos, L.G.S. Sobral and A.J.B. Dutra

Application of sugar foam to a pyrite-contaminated soil • ARTICLE, Pages 399-406
C. Jiménez Moraza, N. Iglesias and I. Palencia

Reactivity and mineralogical evolution of an underground mine sulphidic cemented paste backfill • ARTICLE, Pages 407-419
Serge Ouellet, Bruno Bussière, Mamert Mbonimpa, Mostafa Benzaazoua and Michel Aubertin

Sludge recycling within cemented paste backfill: Study of the mechanical and leachability properties • ARTICLE, Pages 420-432
Mostafa Benzaazoua, Jean-François Fiset, Bruno Bussière, Mathieu Villeneuve and Benoît Plante

Fundamental limits for the recycling of end-of-life vehicles • ARTICLE, Pages 433-449
M.A. Reuter, A. van Schaik, O. Ignatenko and G.J. de Haan

Processing contaminated soils and sediments by high power ultrasound • ARTICLE, Pages 450-453
A.F. Collings, A.D. Farmer, P.B. Gwan, A.P. Sosa Pintos and C.J. Leo

Comparison of limestone, dolomite and fly ash as pre-treatment agents for acid mine drainage • ARTICLE, Pages 454-462
S.S. Potgieter-Vermaak, J.H. Potgieter, P. Monama and R. Van Grieken

Heavy metals removal from solution by palygorskite clay • ARTICLE, Pages 463-470
J.H. Potgieter, S.S. Potgieter-Vermaak and P.D. Kalibantonga

High concentration suspension pumping • ARTICLE, Pages 471-477
Lionel Pullum, Lachlan Graham, Murray Rudman and Ross Hamilton

Alkaline leaching of zinc from electric arc furnace steel dust • ARTICLE, Pages 478-485
A.J.B. Dutra, P.R.P. Paiva and L.M. Tavares

Biosorption of arsenic(V) with Lessonia nigrescens • ARTICLE, Pages 486-490
Henrik K. Hansen, Alexandra Ribeiro and Eduardo Mateus

Application of electric spark generated high power ultrasound to recover ferrous and non-ferrous metals from slag waste • ARTICLE, Pages 491-499
M.P. Wilson, L. Balmer, M.J. Given, S.J. MacGregor, J.W. Mickersie and I.V. Timoshkin

Electrodialytic remediation of copper mine tailings: Comparing different operational conditions • ARTICLE, Pages 500-504
Adrian Rojo, Henrik K. Hansen and Lisbeth M. Ottosen

Laboratory evaluation of Fe0 barriers to treat acidic leachates • ARTICLE, Pages 505-514
Georgios Bartzas, Kostas Komnitsas and Ioannis Paspaliaris

Technical Notes
Extraction of lithium from boron clays by using natural and waste materials and statistical modelling to achieve cost reduction • SHORT COMMUNICATION
Pages 515-517
Atıl Büyükburç, Derya Maraşlioğlu, M.S. Uğur Bilici and Gülser Köksal

Thermal expansion of slate wastes • SHORT COMMUNICATION, Pages 518-520
M.E.M.C. Silva and A.E.C. Peres
Electrocoagulation as a remediation tool for wastewaters containing arsenic • SHORT COMMUNICATION, Pages 521-524
Henrik K. Hansen, Patricio Núñez and Rodrigo Grandon

Study of pore size distribution of slate ceramic pieces produced by slip casting of waste powders • SHORT COMMUNICATION, Pages 525-527
A.A.P. Mansur, A.E.C. Peres, L. Palhares and H.S. Mansur

MINING ENGINEERING

June 2005

21 Importance of longwall mining to the coal industry, George V. Weisdack and James F. Kvitkovich

27 Technology for community development in Central Asia, Morris T. Worley

31 Repair the fan, save money, Thomas J. Kuli and Tim Rape

34 Mining the benefits from fault detection Keith E. Meyers

Technical Papers

37 Application of modern technology in today's limestone quarry operation, Y.J. Zhang and B. Moore

43 Probabilistic approach to project-specific political risk analysis for mineral projects Z. Gavelan and S. Dessureault

50 Coal mine methane drainage using multilateral horizontal wells, J.A. Zupanick

February 2006

FEATURE ARTICLES

27 Earthmover tires - big tires, big shortages Tim O'Neil

31 Mining engineering education initiatives in Australia, Bruce Hebblewhite

38 Miners remain upbeat at NWMA meeting Steve Kral

43 Automation controls can lower plant costs, Steve Kral

45 Skills, talent and future leaders in a candidate-deficient market Leigh Freeman

Technical Papers

49 Standing support alternatives in western United States longwalls T.M. Barczak and S.C. Tadolini

56 Sustainable development and exploration V.T. McLemore and D. Turner
62 Implementation of the international valuation standards, T.R. Ellis

58/3 March 2006
FEATURE ARTICLES


43 Copper industry continues to break records, William R. Yernberg

45 Industry, government review mine safety procedures

46 Early mining safety heroes, L. Michael Kass

47 Industry technologies featured at MPES meeting

Technical Papers

49 Cost of coal mine catastrophes, D.W. Alexander

54 Closure at the San Manuel mine site, Arizona, J. Parker and T. Braun

59 Integrating community capacity building and reuse planning into the reclamation of American mine lands: how U.S. regulators are cleaning up with communities C.M. LaRosa, J.L. Ariail III and K.A. Larsen