Sustainable innovation in underground hardrock mining technology
by A. Bamber and M. Scoble

Dynamic hydraulic shovel simulator for improved machine performance
by S. Frimpong and Y. Hu

Drill-to-mill: Efficient drilling and blasting resulting in increased mill throughput at Barrick Goldstrike
by M. Rantapaa, R. Mckinstry, and T. Bolles

The integration of condition monitoring into the maintenance process
by J. Werner and M.W. Lewis

Suitability of PEM fuel cells for underground mining vehicles
by M.C. Bétournay, G. Bonnell, E. Edwardson, and W. Lidkea

Effect of mineralogical and petrographical properties of marble on cutting by diamond wire
by Y. Özçelik

Design and wear of SAG mill shell liners at Brunswick mine
by I. Orford, M. Cooper, C. Larsen, M. Renaud, P. Radziszewski, L. Strah

Flotation of carbon values from blast furnace flue dust using statistical design

A review of binder materials used in stabilized backfills
by J. Petrolito, R.M. Anderson, and S.P. Pigdon

1221 Nuclear waste disposal and rock mechanics: contributions of the Underground Research Laboratory (URL), Pinawa, Manitoba, Canada
C. Fairhurst

1229 Developing tools for excavation design at Canada’s Underground Research Laboratory
N. Chandler

1251 20 years of excavation response studies at AECL’s Underground Research Laboratory
R.S. Read

1277 The influence of rock fabric on excavation damage in the Lac du Bonnett granite
R.A. Everitt and E.Z. Lajtai

1305 In situ rock stress determinations in deep boreholes at the Underground Research Laboratory
P.M. Thompson and N.A. Chandler

1317 Quantification and interpretation of seismicity
R.P. Young, D.S. Collins, J.M. Reyes-Montes and C. Baker

1329 A bonded-particle model for rock
D.O. Potyondy and P.A. Cundall

1365 Dynamic modelling of induced seismicity
J.F. Hazzard and R.P. Young

1377 An in-situ thermo-hydraulic experiment in a saturated granite I: design and results
I. Berchenko, E. Detournay, N. Chandler and J. Martino
An in situ thermo–hydraulic experiment in a saturated granite II: analysis and parameter estimation  
E. Detournay, T. Senjuntichai and I. Berchenko  

Excavation-induced damage studies at the Underground Research Laboratory  
J.B. Martino and N.A. Chandler  

Innovative laboratory testing  
J.S.O. Lau and N.A. Chandler  

Damage around a cylindrical opening in a brittle rock mass  
S. Mitaim and E. Detournay  

Effect of water and geological factors on the long-term stability of fracture zones in the Päijänne Tunnel, Finland: a case study  
A. Lipponen, S. Manninen, H. Niini and E. Rönkä  

3D Behaviour of bolted rock joints: experimental and numerical study  
G. Grasselli  

Assessing in situ microcrack damage using ultrasonic velocity tomography  
I.L. Meglis, T. Chow, C.D. Martin and R.P. Young  

Time-dependent drift degradation due to the progressive failure of rock bridges along discontinuities  
J. Kemeny  

A statistical approach for the integrated analysis of mine-induced seismicity and numerical stress estimates, a case study—Part I: developing the relations  
R.A. Mercer and W.F. Bawden  

A statistical approach for the integrated analysis of mine induced seismicity and numerical stress estimates, a case study—Part II: evaluation of the relations  
R.A. Mercer and W.F. Bawden  

Squeezing rock conditions at an igneous contact zone in the Talouin tunnels, Tehran-Shomal freeway, Iran: a case study  
A. Yassaghi and H. Salari-Rad  

Geohydromechanical processes in the Excavation Damaged Zone in crystalline rock, rock salt, and indurated and plastic clays—in the context of radioactive waste disposal  
Chin-Fu Tsang, F. Bernier and C. Davies  

Exploitation of developed coal mine pillars by shortwall mining—a case example  
A. Kushwaha and G. Banerjee  

Development of a computer program for inhomogeneous modeling using 3-D BEM with analytical integration and its application to rock slope stability evaluation SHORT COMMUNICATION  
C.L. Liu, G. Li, K. Kuriyama and Y. Mizuta  

Study of the time–space–strength relation for mining seismicity at Laohutai coal mine and its prediction SHORT COMMUNICATION  
M.F. Cai, H.G. Ji and J.A. Wang  

Effect of the specimen size on the determination of consistent Shore hardness values SHORT COMMUNICATION  
R. Altindag and A. Güney  

The influence of rock microhardness on the sawability of Pink Porrino granite (Spain) SHORT COMMUNICATION  
N. Sánchez Delgado, A. Rodríguez-Rey, L.M. Suárez del Río, I. Diez Sarriá, L. Calleja and V.G. Ruiz de Argandoña  

Numerical simulation of the dynamic impact breakage testing of D.J. Reddish, L.R. Stace, P. Vanichkobchinda and D.N. Whittles  

A methodology for rock mass characterisation and classification to improve blast results
Essaïeb Hamdi and Jean du Mouza

195 Analytical design method for a truss-bolt system for reinforcement of fractured coal mine roofs—illustrated with a case study
B. Liu, Z.Q. Yue and L.G. Tham

219 3D numerical modeling of longwall mining with top-coal caving
N.E. Yasitli and B. Unver

237 Fatigue properties of intact sandstone samples subjected to dynamic uniaxial cyclical loading
M.N. Bagde and V. Petroš

251 Variation in strength and creep life of six Japanese rocks
K. Shin, S. Okubo, K. Fukui and K. Hashiba

261 A risk-based approach for the design of rock slopes subject to multiple failure modes—illustrated by a case study in Hong Kong
R.J. Pine and W.J. Roberds

277 Characterisation and engineering properties of tectonically undisturbed but lithologically varied sedimentary rock
E. Hoek, P.G. Marinos and V.P. Marinos

287 Hydromechanical interactions in a fractured carbonate reservoir inferred from hydraulic and mechanical measurements
F. Cappa, Y. Guglielmi, P. Fénart, V. Merrien-Soukatchoff and A. Thoraval

307 Experimental technique for measuring phase velocities during triaxial compression tests
SHORT COMMUNICATION
J.A. Donald and S.D. Butt

315 A new clustering approach for partitioning directional data • SHORT COMMUNICATION
C.D. Klose, S. Seo and K. Obermayer

323 Predicting elastic properties of intact rocks from index tests using multiple regression modelling • SHORT COMMUNICATION

MINERALS ENGINEERING

JANUARY 2005

1 Characterisation of the pulse wave of an InLine Pressure Jig in a near density application
A.B. Nesbitt, W. Breytenbach and P.J. van der Plas

9 A mechanistic approach to modelling Knelson concentrators
T. Coulter and G.K.N. Subasinghe

19 Performance of the reflux classifier for gravity separation at full scale
K.P. Galvin, A. Callen, J. Zhou and E. Dorooodchi

25 The use of surface active chemicals in heavy medium viscosity reduction
N.T. Mabuza, J. Pocock and B.K. Loveday

33 Removal of copper ions from a waste mine water by a liquid emulsion membrane method
F. Valenzuela, C. Fonseca, C. Basualto, O. Correa, C. Tapia and J. Sapag

41 Experimental characterization of the influence of tailings fineness and density on the quality of cemented paste backfill
M. Fall, M. Benzaazoua and S. Ouellet

45 Ternary-mixture grinding of ceramic raw materials
H. Ipek, Y. Ucbas and C. Hosten

51 Modelling of entrainment in industrial flotation cells: the effect of solids suspension
X. Zheng, J. -P. Franzidis, N. W. Johnson and E. V. Manlapig

59 Deinking flotation: influence of calcium soap and surface-active substances
C. A. Costa and J. Rubio
65 Flotation froth monitoring using multiresolutional multivariate image analysis
J. J. Liu, J. F. MacGregor, C. Duchesne and G. Bartolacci

77 Adsorption mechanism of guar gum at solid–liquid interfaces
J. Wang, P. Somasundaran and D. R. Nagaraj

83 Air-assisted solvent extraction: towards a novel extraction process
H. M. Tarkan and J. A. Finch

89 A study of gold anodic behavior in the presence of various ions and sulfide minerals in cyanide solution
M. M. Aghamirian and W. T. Yen

103 A two-stage bacterial pretreatment process for double refractory gold ores
R. K. Amankwah, W. -T. Yen and J. A. Ramsay

109 The use of ion exchange resins for the treatment of cyanidation tailings. Part 2—pilot plant testing
K. Fernando, T. Tran and G. Zwolak

119 A method of bubble diameter assignment † SHORT COMMUNICATION
M. Bailey, C. O. Gomez and J. A. Finch

125 Coalescence of bubbles sampled for imaging † SHORT COMMUNICATION
M. Bailey, J. Torrealba-Vargas, C. Gomez and J. A. Finch

FEBRUARY 2005

139 An overview of the use of chemical reagents in mineral processing
M.J. Pearse

151 Reagent selection and optimization—the case for a holistic approach
D.R. Nagaraj

159 Process reagents for the enhanced removal of solids and water from oil sand froth

D.N. Madge, J. Romero and W.L. Strand

171 The effects of frother and collector distribution on flotation performance
K. Hadler, Z. Aktas and J.J. Cilliers

179 Foaming of polypropylene glycols and glycol/MIBC mixtures
Su Nee Tan, R.J. Pugh, D. Fornasiero, R. Sedev and J. Ralston

189 The influence of the reagent suite on the flotation of ores from the Merensky reef
J. Wiese, P. Harris and D. Bradshaw

199 Reagents in igneous phosphate ores flotation
R.C. Guimarães, A.C. Araujo and A.E.C. Peres

205 Anglesite flotation: a study for lead recovery from zinc leach residue
F. Rashchi, A. Dashti, M. Arabpour-Yazdi and H. Abdizadeh

213 The use of a novel oxime derivative [Phenyl(N-methylaniline)ketooxime] as leach reagent in the Copper(II) hydrometallurgy
Félix José Sueros Velarde, Hubert Oporto Siles and Angela F. Danil de Namor

219 Reagents in iron ores flotation
A.C. Araujo, P.R.M. Viana and A.E.C. Peres

225 On the kinetics of precipitate flotation of Cr III using sodium dodecylsulfate and ethanol
B.Y. Medina, M.L. Torem and L.M.S. de Mesquita

233 The use of selective depressants for the separation of ABS and HIPS by froth flotation
R.D. Pascoe

239 Development of methodologies to improve the assessment of reagent behaviour in flotation with particular reference to collectors and
D.J. Bradshaw, B. Oostendorp and P.J. Harris
247 Determination of preferential adsorption of Depramin® on mineral surfaces by ToF-SIMS
R.G. Smeink, G.C. Leerdm van and J.W.G. Mahy

257 A technique for quantification of adsorbed collectors: xanthate
D. Lascelles and J.A. Finch

263 Colorimetric determination of common industrial frothers
S. Gélinas and J.A. Finch

267 The infrared spectra of amine collectors used in the flotation of iron ores
R.M.F. Lima, P.R.G. Brandao and A.E.C. Peres

275 Reagents in calamine zinc ores flotation
C.A. Pereira and A.E.C. Peres

279 Flotation of Aladag® oxide lead–zinc ores • SHORT COMMUNICATION
Pages 279-282
G. Önal, G. Bulut, A. Gül, O. Kangal, K.T. Perek and F. Arslan

TECHNICAL PAPERS (peer reviewed and approved)

53 Relationship of roof movement and strata-induced microseismic emissions to roof falls
A. T. Iannacchione, P. R. Coyle, L. J. Prosser, T. E. Marshall and J. Litsenberger

61 Fully automated system for monitoring pit wall displacements
R. Wilk, G. Bastin, A. Chrzanowski, W. Newcomen and L. Shwydiuk

68 Recent advances in proximity warning technology for surface mining equipment
T. Ruff and J. Steele

73 Technical note: Review of recent experience with large-angle, wide angle lifter-liners
D. Royston

JANUARY 2005

FEATURE ARTICLE

25 Discovery of the El Sazauzal gold deposit in Chihuahua, Mexico
Alain R. Charest, Peter D. Lewis and Susan P. Taite

30 (R)evolution in mining – implications for exploration
Murray W. Hizman

34 Technology news: Expert system helps Kemess Mine increase throughput

36 Technology news: Industrial weighing solutions are accurate, portable

TECHNICAL PAPERS
(peer reviewed and approved)

41 Assessment of noise control commonly used on jumbo drills and bolters in Western United States underground metal mines
E. R. Reeves
48 Conveyor-pulley specifications for aggregates
D. Keech

54 Technical-note: Motorized conveyor-pulley technology for portable aggregate equipment
Larry Spiers

FEBRUARY 2005

FEATURE ARTICLES

21 Replacing the stone and rebuilding Pentagon
Jim Owens

27 Large excavator cuts operating costs at Alabama coal mine
Bill Elverman

30 Copper prices help Arizona’s mining industry
William R. Yernberg

33 Congressional makeup could help U.S. mining
Steve Kral

TECHNICAL PAPERS
(peer reviewed and approved)

37 Community development in the urban area of a developing country- a case study of the Antam-Pongkor gold mine, Java Islands, Indonesia
I Irawan, C.E.F. Mumbunan and A. Ardianto

42 New Mexico Mines Database

50 Paste tailings management alternative-study results for Molycorp’s lanthanide groups operations in Mountain Pass California
J.M. Johnson, J Vialpando and C. Lee