JUNE 2002

83 Development of an index to quantify the addiction recovery in light minerals
S. A. Argyropoulos and M. Pekguleryuz

87 Characterization of red mud aggregate populations generated under shear conditions.
M. J. Gagnon, G. Simard, A. Charette and G. Peloquin

92 Analysis of results from a PFC measurement campaign
A. Gosselin and P. Desclaux

96 The Pechiney reduction cell family: 25 years of development in design and process control
C. Vanvoren

101 Discounted cash flow analysis - Methodology and discount rates
L. D. Smith

JULY 2002

65 Evaluation of shotcrete rock support systems in underground mines by a new non-intrusive technique.
M. Momayez, F. Hassani, P. Guevremont and D. O'Donnell

69 Rock fall in surface mining
C. O. Brawner and J. Kaletja II

75 Geotechnical challenges at the Beal Mountain mine Montana
D. Stone

81 Factors affecting the conversion of calcium cyanamide to black cyanide

88 Iron steel making in the third millennium
L. F. Verdeja, J. P. Sancho and J. I. Verdeja

96 Silicate micro-encapsulation of pyrite to prevent acid mine drainage
K. Fystas, P. Bousquet

100 The contour method of estimating mineral resources
H. Agnerian and W. E. Roscoe

407 Preface,
Lanru Jing and John A. Hudson

409 Numerical methods in rock mechanics,
L. Jing and J. A. Hudson

429 A modeling approach for analysis of coupled multiphase fluid flow, heat transfer, and deformation in fractured porous rock,
J. Rutqvist, Y. -S. Wu, C. -F. Tsang and G. Bodvarsson

443 Development of a local degradation approach to the modelling of brittle fracture in heterogeneous rocks,
Z. Fang and J. P. Harrison

459 Application of a local degradation model to the analysis of brittle fracture of laboratory scale rock specimens under triaxial conditions,
Z. Fang and J. P. Harrison

477 Coupled analysis of flow, stress and damage (FSD) in rock failure,
C. A. Tang, L. G. Tham, P. K. K. Lee, T. H. Yang and L. C. Li

491 Numerical simulation of the rock fragmentation process induced by indenters,

507 Simulation of failure around a circular opening in rock,
A. Fakhimi, F. Carvalho, T. Ishida and J. F. Labuz

517 Simulation of excavations in jointed rock masses using a practical equivalent continuum approach,
T. G. Sitharam and G. Madhavi Latha

JULY 2002

527 Editorial(s)
J. A. Hudson

529 Rock mechanics in Australia
E. T. Brovra

539 A theoretical model for rock joints subjected to constant normal stiffness direct shear
J. P. Seidel, C. M. Haberfield

555 Some aspects of unsaturated flow in jointed rock
B. Indraratna, J. Price, P. Ranjith, W. Gale

569 Developments in the design of tunnels and caverns in the Triassic rocks of the Sydney region
P. J. N. Pells

589 Measurement and analysis of rock mass discontinuity spacing and frequency in part of the Fimiston Open Pit operation in Kalgoorlie, Western Australia: a case study
D. R. Wines, P. A. Lilly

603 Stress measurements from oriented core
E. Villaescusa, M. Seto, G. Baird

617 Quantifying stresses and support requirements in the undercut and production level drifts of block and panel caving mines
R. Trueman, M. Pierce, R. Wattimena

633 Evaluation and application of controlling parameters for seismic events in hard-rock mines
D. A. Beck, B. H. G. Brady

643 A study of highwall mining panel stability
D. P. Adhikary, B. Shen, M. E. D. Fama

661 Integrating tools for longwall geomechanics assessment
M. Kelly, X. Luo, S. Craig

IM>1STRIAL.,MINhkM.S

JUNE 2002

29 Refractories for iron making
New developments and trends

46 Slica flour
The finest money can buy

58 Air classification for filler processing

JULY 2002

36 Abrasive bauxite
Giving proppants the nod

42 Having a blast
Evaluating abrasive minerals

48 GCC in China
Looking good on paper

58 Spring forward
UCL advances particle size classification

60 Flexible sizers solve barytes QC challenges

AUGUST 2002

25 Caustic Magnesia
Giving it water treatment

38 Breaking the mould
Mineral opportunities in investment casting.

45 Balancing act
Raising the standard in global borate business.

Clacining Refractory Minerals
Shaft kiln solutions

JUNE 2002

395 The use of electrochemical measurements in the flotation of a platinum group minerals (PGM) bearing ore
A.M. Busvvell, D.J. Bradshaw, P.J. Harris and Z. Ekmekçi

405 Surface potential and wettability of enargite in potassium amyl xanthate solution
H. GuoandW.-T.Yen

415 Magnetic separation of hematite and limonite fines as hydrophobic flocs from iron ores
S. Song, S. Lu and A. Lopez-Valdivieso

423 Studies on pinched sluice concentration. Part 1: The effects of operating variables and sluice geometry on the performance of pinched sluices
L. Ergün and S. Ersayn

437 Studies on pinched sluice concentration. Part II: Characterization of flow over a pinched sluice
L. Ergün and S. Ersayn

Technical Note

447 Optimal particle acceleration in a jet mill nozzle
S. Voropayev and D. Eskin

451 Application of microwave irradiation to quick leach of zinc silicate ore
Y. Hua, Z. Lin and Z. Yan

457 A study of the selective leaching of complex sulphides from the Eastern Black Sea Region, Turkey

MIMM I.M;iM 1 R\d

JUNE 2002

57 TECHNOLOGY NEWS
Caterpillar truck dumps load without raising the body

58 Strong programming, optimism seen at SME's Annual Meeting
T. O'Neil, S. Kral, W. R. Yernberg and G. Renne

JULY 2002

25 Long-term trends in copper prices
John E. Tilton

33 More than 110,000 attend ConExpo in Las Vegas
Steve Kral

45 National Mining Hail of Fame to induct seven

AUGUST 2002

17 Taconite mining - concerns and challenges
William R. Yernberg

20 11th Annual MEMS Conference: Reshaping the minerals and metals industry
Lisa Morrison

22 Minerals processing professionals urged to promote their industry
Steve Kral

26 Attendance up, attitude upbeat at prospectors and developers meeting
Bruce Geller

ORICA - NİTRO PATLAYICI MADDELER TİCARET VE SANAYİ A.Ş.

GENEL MÜDÜRLÜK
Cumhuriyet Cad. No: 27 / Ankara
Tel: (0312) 442 16 00 Fax: (0312) 442 18 34
www.orica-nitro.com.tr

FABRIKA
Taban - Onbaş Keliş 51/10 Blok Ankara
Tel: (0312) 665 19 63 Fax: (0312) 665 19 68

e-mail: info@orica-nitro.com.tr
NITROMAK, with its extensive product range and blasting services has served the mining and construction sector since 15 years by providing safe, rapid and economically feasible solutions.

NITROMAK is the first explosives Company in Turkey;
- producing the new generation Emulsion explosives in the trade name of EMULITE;
- using NONEL which is known to be the most developed non-electric detonating system in the world.