

Contents

Page No.

Total primary milling cost reduction by improved liner design J. DAHNER, and A. VAN DEN BOSCH	1
Does thickening save water? A.J. VIETTI, J.C.J. BOSHOFF, and A. COPE	7
Application of fundamentals in optimizing platinum concentrator performance M.M. VALENTA and H. MAPHETO	13
Non-invasive passive array technology for improved flow measurements of slurries and entrained air C.V. O'KEEFE, R. MARON, J. FELIX, A.M. VAN DER SPEK, and P. ROTHMAN	21
Flotation process optimization through frequent in-line grade measurement as an alternative to sampling surveys that deliver outdated results K. KEET and F.E. DU PLESSIS	31
Application of borehole radar to pothole identification and delineation ahead of the working face in platinum mines C. KEMP, P. DU PISANI, and M. SHOKE	37
The Merensky and Bastard cyclic units and the Platreef of the Bushveld Complex: consequences of Main Zone magma influxes and dynamics F.J. KRUGER	43
Development of high-resolution 3D vertical seismic profiles C.C. PRETORIUS, M.A. GIBSON, and Q. SNYMAN	47
Geological interpretations from the PGE distribution in the Bushveld Merensky and UG2 chromitite reefs R.G. CAWTHORN	57
Stirred milling—new comminution technology in the PGM industry C. RULE	71
UG2 metallurgical variability N.V. RAMLALL, M.A.W. BRYSON, and B.K. LOVEDAY	79
Implementing strategies to improve mill capacity and efficiency, with platinum references and case studies N.J. BARKHUYSEN	85
Optimizing concentrate allocation to Anglo Platinum smelters G.A. GEORGALLI and D.K. ANDERSON	91
Statistical size analysis of potholes: an attempt to estimate geological losses ahead of mining at Lonmin's Marikana mining district D. HOFFMANN	97
Anglo American Platinum's approach to resource classification case study—Boschkoppie/Styldrift minewide UG2 project K. MOHANLAL and P. STEVENSON	105
Platinum group metals: a unique case study in the sustainability of mineral resources G.M. MUDD	113
Spatial information management from multidisciplinary data M. WOODHALL and E. STRYDOM	121
Improving safety and security in platinum mining by utilizing the newest facial recognition technology B. NASIOROWSKA	129
Cost-effective pressure filtration for platinum concentrates D. PEPPER, C.M. RULE, and M. MULLIGAN	137
The estimation of platinum flotation grade from froth image features by using artificial neural networks C. MARAIS and C.A. ALDRICH	143
Is there some commonality between the geological structures in the Bushveld Complex and the Great Dyke? M.K.C. ROBERTS and V. CLARK-MOSTERT	149
Introduction of 3 m cable anchors as face support in 'timber-less stopes' at Dishaba Mine L. VAN ASWEGEN, R. JOHNSON, and G.L. SMITH	157
Measuring rock dumps from space? How new technology could change the way we measure rock dumps and tailings dams J.H. CROTTY, B. ERNST, A. MACHELE, and J. LATEGAN	169
A proposal for accurate consistent continuous feed into electric arc furnaces in the platinum industry J. KIRSCH	177
Energy consumptions for Kell hydrometallurgical refining versus conventional pyrometallurgical smelting and refining of PGM concentrates K. LIDDELL, T. NEWTON, M. ADAMS, and B. MULLER	181
Corrosion of copper coolers in PGM smelters B.M. THETHWAYO, and A.M. GARBERS-CRAIG	187
An evaluation of steels selected for use within electric arc furnaces L.A. CORNISH, M. GRANT, B. WILLIAMS, I. WILSENACH, and H. MCALLISTER	195

Contents *(Continued)*

Page No.

How applicable is industrial engineering in mining? T.S. HATTINGH and O.T. KEYS	205
The energy and water required to drill a hole P. FRASER	211
Effective process monitoring in underground mining M. JOHANSSON	223
Hard-rock room and pillar mining best practice industry workshop R.G.B. PICKERING, A.G. DU PLESSIS, and G. ANNANDALE	231
Effluent treatment: what role can modified waste/biomass play in the local platinum industry— a review T. RAMAHALI and T. MAHLANGU	239
Application potential of DC smelter technology for the platinum industry in South Africa R. DEGEL, K. SCHMALE, M. KÖNEKE, and H. SCHMIEDEN	247
Human factors in mine mechanization T.S. HATTINGH, T.J. SHEER, and A.G. DU PLESSIS	255
Hydropower technology can assist in meeting the safety and health ‘2013 milestones’ and save energy: a case for ‘localized’ hydropower systems in general and hydropowered stope drill rigs in particular P. FRASER	259
A systematic approach to the optimization of extra low profile (XLP) mine productivity for narrow reef platinum mines M. ANDREWS and R. PICKERING	267
Review of mechanization within Lonmin G. WEBBER, A.A. VAN DEN BERG, G.G. LE ROUX, and J.H.K HUDSON	277
Refrigeration and cooling concepts for ultra-deep platinum mining L. MACKAY, S. BLUHM, and J. VAN RENSBURG	285
Meeting the reduced availability and rising costs of electrical power: Anglo Platinum ventilation and cooling strategies M. BIFFI and D. STANTON	293
Is the EPCM consultant still relevant? H.W. READ	303
Sustainable ore reserves generation at variable stoping rates for a UG2 conventional mining layout L.J. MOHLOKI and C. MUSINGWINI	309
Mine optimization and its application using the Anglo Platinum Mine Optimisation Tool (APMOT) A. SMIT and G. LANE	317
Simultaneous mining and mineral processing enterprise optimization for the platinum industry G. WHITTLE and S. BURKS	329
Leading the next boom? Competitive Eastern Limb platinum supply J.E. MCGILL	339
Preliminary evaluation of the proposed mining method at Eland Platinum Mine G.S. POTGIETER and D.F. MALAN	345
Development and implementation of a PGE mineral asset valuation curve G. NJOWA, C. MUSINGWINI, and A. CLAY	353
The application of modifying factors to the Merensky Reef and UG2 chromitite layer, Bushveld Complex K. LOMBERG AND S. RUPPRECHT	361
A healthy future: platinum in medical applications A. COWLEY	369
Keynote Address: Strategic implications for the platinum group metals: privatization vs. nationalization in South Africa S.A. FORREST, H. ROWLEY, S. TRICKEY, and J. UNDERWOOD	373
Jewellery shocks from China and India J.C. WATTS, B. CLARKE, and O. ATILAN	379
Recycling: volume, momentum and consequences for PGMs A. RYAN, B. CLARKE, O. ATILAN, J. WATTS, and S. TRICKEY	383
Options for PGM supply outside of Africa S. TRICKEY	387
The potential effects of powertrain developments in the auto sector on PGM demand B. CLARKE, J.C. WATTS, and O. ATILAN	393
Consumable unit cost versus metallurgical performance: the impact of grinding media on grinding chemistry and PGM recovery C.J. GREET	399