

TABLE of CONTENTS

Foreword	vi
Acknowledgments	vii
Canadian Mineral Processors Board of Directors (2019-2020)	viii

PLENARY PRESENTATION

Canadian Milling Practice 2000-2020: The Pace of Change	1
<i>E.R. Bobicki, C. Gibson, J-F. Boulanger</i>	

TECHNICAL PROGRAM

A Simple Method of Assessing Ball Mill Health using Bond Tests and Functional Performance	2
<i>A.G. Doll, A. Morneau, J-F. Dupont, D. Michaud</i>	
EMAT Testing for Wireless Lifter Wear Prediction – Lab Results	9
<i>V. Vaidya, B. Lopez, A. Syed, B. Dallaire</i>	
Assessing the Response of Tumbling Mills to the Replacement of Balls by Relo Grinding Media (RGM) – Part 1. Comparative Bench-Scale Experiments and Demonstration Full-Scale Test	20
<i>V. Genchev, P. Bodurov, N. Kolev, D.P. Leroux</i>	
Online Gold Analysis for Flotation Control	32
<i>T. Koskinen, L. Veki, J. Välimaa, A. Pelli, E. Sharifi, J. Timperi</i>	
Optimizing Refractory Gold Ore Processing at the Goldstrike Operations with Online NIR Analyzer	43
<i>C. Nelson, P. Mühlen, A. Janik</i>	
Cyanide Optimization and Control Philosophy at the Touquoy Mine	53
<i>R. Payant, M. Larter, E. Pushie, C. Hudson</i>	
Development of Process Options to Treat Oxidized Mineralization Containing a Very High Concentration of Cyanide-soluble Copper	65
<i>C. Fleming, J. MacDonald, J. Espinoza L. Melis</i>	
Improving Gold Recovery within a Carbon Circuit	81
<i>P. Roy, A. Berton, A. Thivierge, M. Troie, A. Morasse</i>	
Selecting an Economical Cyanide Destruction Process	93
<i>R. Agius</i>	

Cyanide Air Removal Technology	100
<i>K. Gottschalk, S. Ingram</i>	
The Bulk Sorting Potential of the CUMO Deposit in Idaho, USA	108
<i>R.J. McCarthy, S.M. Dykes</i>	
Application of Bulk Ore Sensing and Sorting for Optimal Allocation of Mined Material: A Techno-Economic Analysis Case Study	119
<i>A. Plugatyr, M. Scott, J. Rutter, C.P. Baxter, S. Bedrossian</i>	
CanMicro: Scaling up Microwave Technology for the Mining Industry	131
<i>E.R. Bobicki, D. Boucher, J. Forster, A. Gillis, G. Holcroft, D. Fragomeni</i>	
Value Recovery from Waste Rock Stockpiles	145
<i>M. Xu, A. Lee, J. Dong, C. Buck, J. Townsend</i>	
Application of the Gangue Rejection Amenability Test (GRAT) for Gold Ores	152
<i>T.D.H. McGrath, A.R. Bax, A. Escolme, J.L. McGrath</i>	
Preliminary Evaluation of Neutron Activation for Gold and Silver Analysis Using a Medical Cyclotron	162
<i>M. Campbell, A. Tikka, M. Somppi, Z. Yamak</i>	
Upgrade of Existing Tailing Thickener for Performance Enhancement at San Julian Operation, Mexico – A Case Study	163
<i>A. Baruah, D. Martinez, J. Baladron, A. McIntosh, S. Ortiz</i>	
Leading Edge Scale Inhibition and Automation Improve Efficiency and Lower Operational Costs	171
<i>S. Vincze</i>	
Recycling of a Thickener Overflow Stream at a North American Concentrator	177
<i>A. Di Feo, S. Mortazavi, L. Morin, A. Demers</i>	
TPH/Cubic Metre – An Alternative way to Define Thickener Geometry	188
<i>D. Minson</i>	
Utilising Pulp Chemistry Measurements to Assess the Treatability of Woodlawn Tailing Material	199
<i>C.J. Greet, I. Pattison, G. Small</i>	
Assessing Risks and Opportunities for Metallurgical Value Creation Initiatives by Leveraging In-House Financial Modelling	212
<i>S. Klohn</i>	
The Truth about Population Balance Modelling	224
<i>R.E. McIvor, J.A. Finch, S. Makni</i>	

Towards Predictive Geometallurgy: Inferring Particulate Heterogeneity from Image Analysis	247
<i>C.P. Baxter, A. Plugatyr, J. Gottheil, S. Bedrossian</i>	
Pilot Testing Pressurized Flotation Systems for Froth-Free Concentrators	255
<i>A. van Wyk, G. Rowe, C. Bennett, G. Dobby</i>	
Functionalized Biopolymer for Enhanced Metal Recovery in Froth Flotation Processes	269
<i>L. Kuri, A. Madduri, S. Vhora, W. Gibbs, C. Landis, C. Bruin, L. Duncan</i>	
Investigation on the Beneficiation Development of a Manganese Carbonate and Silicate Ore Deposit	279
<i>B. Yu, K. Davis, A. Nicalek, M. Kepman, P. Woo</i>	
Recovery of Copper and Cobalt from Granulated Slag by Leaching with Sulphuric Acid in Conjunction with Manganese Dioxide	292
<i>H. Ng'andu, J. Kapobe, C. Mazala, R. Phiri, M.K. Mpongo</i>	
An Evaluation of Proposed Cobalt Production at Aeon Metals' Walford Creek Copper-Cobalt Project	301
<i>G.J. Harbort, T. Benfield, D. Johnston</i>	
Process Design for the Ivana Uranium-Vanadium Mill	317
<i>C. Edwards</i>	
Keeping up with the Joneses – The Value of Industry Surveys and Benchmarking	328
<i>T.D.H. McGrath, W.P. Staunton</i>	
Challenges of Scale-up in Grinding and Flotation of Rare Earth Minerals – Application to the Ashram Deposit	338
<i>J-F. Boulanger, C. Bazin, D. Smith, D. Lascelles</i>	
Ready for Industry 4.0? Do Not Leave Industry 3.0 Behind	354
<i>S. Nino</i>	