

TABLE of CONTENTS

Foreword	v
Acknowledgments	vi
Canadian Mineral Processors Board of Directors (2015-2016)	vii

KEYNOTE PRESENTATION

Economic and Financial Market Prospects	1
<i>E.Sweet - Managing Director BMO Capital Markets</i>	

COMMINUTION

Beneficiation of Low Grade Ore at the Detour Lake Mine	2
<i>J.-F. Dupont</i>	

Towards a Better Understanding of Stirred Milling Technologies - An Overview of Scale-Up Methodologies	9
<i>P. Radziszewski, A. Moore, M. Gallimore</i>	

Cyanidation in Grinding Circuit: Evaluation of Leaching Parameters in Grinding and Cyanidation Addition Strategy	27
<i>D. Mrabet, C. Gagnon, C. Olsen, R. Dupéré, and J. Châteauneuf</i>	

Geometallurgical Modeling of the Dumont Deposit	39
<i>K. Nasrallah, J. Muinonen,</i>	

Evolution of Direct Coupled Pinion Drive Technology for Grinding Mills	52
<i>F. Tozlu, K. Lim, L. Galarza Castillo, J. Sobil</i>	

PROJECTS

Development of the Rainy River Gold Project and Processing Plant	67
<i>Dave Hall and Paolo Toscano</i>	

Reducing CIP Tails Solution Losses at Goldcorp's Campbell Processing Facilities	82
<i>J. Basi, M. Pharand, S. Hille</i>	

Introduction to the Meliadine Project	99
<i>M. Gaumont and F. Robichaud</i>	

Constancia Project Process Plant Design and Start Up	100
<i>S. Klohn and D. Stephenson, and H. Granados</i>	

Achieving a Great Start-up: Action Plan to Maximize Your Chances 113
Berton, J. Châteauneuf, S. Bellec, P. Champagne, S. Fortier

Commissioning of a Brownfield CDS Plant: Victories and Pitfalls 126
N. Romani, R. Provost, J.C. Milot

PROCESS CONTROL

Recent Developments of Laser-Induced Breakdown Spectroscopy for Real-Time Measurement and Control of Mineral Processing 142
M. Sabsabi, G. Lithgow, P. Bouchard, A. Harhira, A. Blouin

Continuous Real Time Pulp Chemistry Measurements and What They Tell Us About Metallurgical Performance 154
C.J. Greet and K. Selga

A Contribution for the Improvement of a Rotary Sample Divider for Iron Ore Concentrate Sampling 164
J.H. Mbouche and M. Poirier

Carbon Dioxide Used for pH Control at Greens Creek Mill 178
Dave Tahija and Tim Martin

A Re-Examination of the Sacred Cows in the SART Process 187
C.A.Fleming and M. Melashvili

Optimizing Plant Feed Quality and Process Performance Using Geoscan Elemental Analysis 206
H. Kurth

FLOTATION FUNDAMENTALS

Application of the Woodgrove Staged Flotation Reactor (SFR) Technology at the New Afton Concentrator 214
K. Swedburg, C. Bennett, and M. Samuels

Performance of the TankCell e500 at the Kevitsa Mine 224
B.Murphy, T. Mattsson, T. Maksimainen, I. Muzinda, A. Rinne

Improved Cleaner Circuit Performance at DeGrussa Copper Mine with in-situ Column Sparging System 231
J. Knoblauch, H. Thanasekaran, E. Wasmund

FLOTATION DEVELOPMENT

Flotation of the Major Copper Sulphide Minerals – An Electrochemical Viewpoint	242
<i>N.O. Lotter, D.J. Bradshaw, A.R. Barnes</i>	
Typical Reproducibility of Metal Balances in Flotation Plants	257
<i>L. Lachance and D. Leroux</i>	
Reflectance Spectroscopy with X-ray Fluorescence for Rapid Slurry Analysis	269
<i>O. Haavisto and J. Timperi</i>	
Improvement in Copper Flotation-In Terms of Recovery and Concentrate with the use of Specialty Chemical- FLEX 31	281
<i>S. Thirunagari, K. Amarasingham, R.S. MacPhail, Y. Kapai, D. Mukelebai, A. Kabamba, C. Henry, C. Leonard, B. Victor</i>	

PROJECT OPTIMIZATION

Increasing SAG Mill Capacity at the Copper Mountain Mine Through the Addition of a Pre-Crushing Circuit	289
<i>D. Rose, D.G. Meadows, M. Westendorf</i>	
Extension of the Comminution Energy Curves and Application to Stirred Milling Performance	308
<i>G. R. Ballantyne, M. S. Powell, P. Radziszewski</i>	
The Challenges and Ramp Up of Filtered Tails in a Modern Production Plant – Éléonore Project Experience	317
<i>A. Fortin, S. Hille, J. Basi</i>	
Magnetic Conditioning of Sphalerite at Red Dog Mine	318
<i>B. Lacouture, J. Oliver, and B. Lumsden</i>	
Balancing and Estimating the Ore Mineral Contents from Daily Production Samples	326
<i>C. Bazin, M. Sadeghi, J. Roy</i>	
Promoting Energy Efficiency Studies during Mineral Processing Plant Design	340
<i>C. Shook, A. Tylczak, S. Loif, A. Doogan-Smith, B. Hilscher, P. Nayak</i>	

MINERALOGY AND HYDROMETALLURGY

Where Did That Ear Bud Come From? Current Rare Earth Production Facilities	349
<i>J.R. Goode</i>	
Fluid Flow in a Hydrocyclone in the Absence of an Air Core	368
<i>E. Kucukal, J. Furlan, R. Visintainer, J.R. Kadambi</i>	

Dense Medium Separation-An Effective and Robust Pre-Concentration Technology	381
<i>E. Legault-Seguin, C. Mohns, M. Rylatt</i>	
Sulfur-Burning Sulfur Dioxide Gas Plants for Hydrometallurgical Processes	401
<i>K. Nikolaisen, K. Loutet, A. Guenkel</i>	
Operating Experience and Developments of G-Rex and Aurix100 Resin Exchange Technology	413
<i>A. Lewis-Gray, M. Davies, P. Richards, N. Katsikaros</i>	