#### **CONTENTS**

Nickel Processing Technology 10 Years On From Cawse, Bulong And Murrin Murrin Alan Taylor – ALTA Metallurgical Services - Australia

## Integrating Risk Management into Plant Design and Operation: A mineral Processing Perpective

Daina Tamasauskas - IRC - Australia

#### **Treatment of Sulphides**

#### Turnagain Nickel Project Dease Lake, BC, Canada

Frank Wright and Tony Hitchins - Hard Creek Nickel Corp - Canada

Talvivaara Project – Bioheapleaching of a Complex Sulphide Ore in Boreal Conditions Marja Riekkola-Vanhanen – Talvivaara Mining Company Ltd - Finland

#### Yarawindah Ni/Cu/PGE-Prospect, WA

Peter Burger - Washington Resources Ltd - Australia

#### Ammonia Processes

#### **Tailoring the Design of Ammonium Sulphate Crystallizers**

John Warner - Jord International Pty Ltd - Australia

#### Pressure Leaching

#### **Gladstone Nickel Project**

Gavin Becker - Gladstone Pacific Nickel Ltd - Australia

### Direct Contact Pre-Heater Performance in the Bulong High Pressure Acid Leach Circuit

John O'Callahan - Murrin Murrin Operations Pty Ltd - Australia

## Testwork to Support Rigorous Permit Requirements For Polymet Mining's Northmet Deposit in Minnesota Recovery of Cu-Ni-Co-zn-Pd-Pt-Au

Bill Murray Don Hunter, David Dreisinger - PolyMet Mining Company - Canada

#### **Laterite Nickel HPAL Agitation Design**

Bernie Gigas - LIGHTNIN - USA; Mark Greaves - SPX Process Equipment - Australia

#### **Design Aspects of Titanium and Zirconium Lined Nozzles**

Don Want - W.E. Smith Engineering Pty Ltd - Australia

#### **Autoclave Sealing**

Paul Xuereb - John Crane - Australia

### Continuing Development in Nanostructured Oxide-Base Coatings for High-Pressure Acid-Leach Ball Valves

M John B. Williams, Jr., - Scientific Valve and Seal, LP; George E. Kim - Perpetual Technologies, Inc. - USA

## High Performance Coatings for Severe Service Ball Valves in HPAL: Development and Field Results

L. Leblanc and M. Ménard – Plasmatec Inc.; V. Najarian and C.M. Bekins – Velan Inc. – Canada

### The use of a Lean Duplex Stainless Steel in Laterites - An Alternative to 316L Stainless

Trent Mackenzie - Allegheny Technologies Int. – Australia; John Dunn - Allegheny Ludlum - USA

#### **DETACLAD Explosion Clad for Autoclaves and Vessels**

John G. Banker - DMC Clad Metal - USA

#### **Titanium Market Update**

Rob Henson - Uniti Titanium - USA

#### Separation & Purification

### Separation of Copper, Iron and Zinc from Cobalt and Nickel in Minara Process Liquor by Synergistic Solvent Extraction: Pilot Plant Operation

Chu Yong Cheng and Wensheng Zhang – CSIRO Minerals; Michael Rodriguez – Minara Resources Ltd - Australia

#### Solvent Extraction of Nickel with LIX984N Diluted in Kerosene

E. Keshavarz Alamdari, D. Haghshenas Fatmehsari, H. Rafieipour Yousefi, M.H. Khodamorad, and D. Darvishi - Amirkabir University of Technology, R. Atashdehgan, Sh. Daneshpajouh and M.T. Sarzaeem - National Iranian Copper Industries Co. - Iran

### Flowsheet Considerations For Copper-Cobalt Projects In The DRC

Cyril Bourget, D S Flett, Owen Tinkler - Cytec Industries Inc. - South Africa

### Recovery of Cobalt and Zinc from Boleo Leach Solutions Using the CSIRO DSX Process

Chu Yong Chen, Wensheng Zhang and Yoko Pranolo – The Parker Centre/CSIRO Minerals - Australia

### Use of Centrifuges for PLS Clarification in Solvent Extraction

Tore Hartmann – Westfalia Separator Industry GmbH – Germany

# Environmentally Friendly Processing and Purification of Cobalt at Kasese Cobalt Company Limited (KCCL) Using Molecular Recognition Technology (MRT)

Paul Kiggala, Amos Silungwe, Stanford Saungwem and Moses Mugabi - Kasese Cobalt Company Limited - Uganda; Steven R. Izatt, John B. Dale, Neil E. Izatt and Ronald L. Bruening - IBC Advanced Technologies, Inc. – USA

#### Atmospheric Leaching of Laterites Form

#### **Jump-Up Dam Nickel Laterite Heap Leach Project**

Mat Longwort, David von Perger & Peter Bartsch - Heron Resources Limited - Australia

### Downstream Processing Options for Nickel Laterite Heap Leach Liquors

Boyd Willis – Aker Kvaerner Australia PTY Ltd – Australia (Paper Withdrawn)

#### Caldag Nickel Project –Comminution and Transportation of Ore

Ram Choudhury - Aker Kvaerner Australia PTY Ltd

### Development and Piloting of Skye's Atmospheric Limonite and Saprolite Leach Process (SAL) at SGS Minerals

Niels Verbaan, Fiorella Sist, Stephen Mackie and Iain Todd - SGS Mineral Services; David Neudorf – Skye Resources - Canada

#### **Atmospheric Leaching of Laterites**

David Neudorf - Skye Resources - Canada