






Sunday 22 May 2022

Nickel-Cobalt-Copper Sessions

7.30am	Presenter Briefing	Goldsworthy
8.00am – 5.30pm	Registration Desk Open	Foyer 1
8.30am	Arrival Tea and Coffee	Grand River Foyer
9.00am – 10.50am	OPENING SESSION	Grand River Ballroom
9.00am	<p>Welcome to ALTA 2022 Alan Taylor, Conference Founder & Chair, Managing Director & Metallurgical Consultant, ALTA Metallurgical Services, Australia</p> <p>Nickel-Cobalt-Copper Conference Sponsor Welcome Andrew Bekle, Technology Solutions – Mining Solutions, Solvay, Australia</p>	
9.15am	<p>Opening Address: <u>Nickel: Critical to a Sustainable Future</u> Richard Matheson, Director, Marketing Development, Nickel Institute, Australia</p>	
9.45am	<p>Keynote Address: <u>Keys to A Successful Nickel Laterite HPAL Design and Operations: A First Hand Experience</u> Lourdes Valle, Process Engineering Manager, Arafura Resources, Australia</p>	
10.25am	<p><u>Reprocessing Spent Cathode Material from Lithium-Ion Batteries: Modelling the Aqueous Chemistry of Precipitation (Ipsium Cave – Hic Esse Dracones)</u> Mike Dry, Arithmetek, Canada</p>	
10.50am – 11.20am	<p>MORNING TEA Sponsored by:</p> 	Golden Ballroom
11.20am	<p><u>A Critical Assessment of Re-Processing the Cathode “Black Mass” from Spent Lithium-Ion Batteries</u> Bryn Harris, NMR360, Canada</p>	
11.45am	<p><u>The Tech Project – Path to Production</u> Boyd Willis, Queensland Pacific Metals, Australia</p>	
12.10pm	<p><u>Synchrotron Analyses: Adding Value to Characterisation of Nickel and other Critical Energy-Metals in Mineral Ore and Mining Wastes</u> Jessica Hamilton, Australian Synchrotron, ANSTO, Australia</p>	
12.35pm	<p><u>Extraction of Nickel and Cobalt from Different Resources Using Alkaline Glycine Solutions</u> Elsayed Oraby, Curtin University/Western Australian School of Mines, Australia</p>	

1.00pm – 2.00pm	LUNCH <i>Sponsored by:</i> 	<i>Golden Ballroom</i>
2.00pm	<u>Digital Transformation using Simulation in a Project Life Cycle</u> Rob Winter , <i>KWA Kenwalt, Australia</i>	
2.25pm	<u>Process and Agitator Design for Industrial Crystallization Processes</u> Wolfgang Keller , <i>EKATO, Germany</i>	
2.50pm	<u>Brazilian Nickel's Piaui Nickel Project - Sustainable Nickel and Cobalt for a Low Carbon Future</u> Anne Oxley , <i>Brazilian Nickel, UK</i>	
3.15pm – 3.45pm	AFTERNOON TEA <i>Sponsored by:</i> 	<i>Golden Ballroom</i>
3.45pm	<u>The Future of Nickel in a Transitioning World: Modelling the Global Nickel Supply Chain and its Nexus with the Energy System</u> Jessie Bradley , <i>TU Delft, Netherlands</i>	
4.10pm	<u>Deep Sea Polymetallic Nodules: Diversification of Supply</u> Chris Duhayon , <i>Global Sea Mineral Resources, Canada</i>	
4.35pm	<u>Novel Collector Development for Nickel Flotation</u> Fatai Kolawole , <i>Clariant Mining Solutions, Sweden/India/USA</i>	
5.00pm	Day 1 Concludes	
5.00pm – 7.00pm	Welcome Reception <i>Sponsored by</i> '  NobelClad Sponsor Address, Edgar Vidal , <i>VP Marketing & Business Development. NobelClad, USA</i>	<i>Golden Ballroom</i>



Monday 23 May 2022

7.30am	Presenter Briefing	<i>Goldsworthy</i>
8.00am – 5.30pm	Registration Desk Open	<i>Foyer 1</i>
8.30am	Arrival Tea and Coffee	<i>Grand River Foyer</i>
9.00am – 10.30am	OPENING SESSION	<i>Grand River Ballroom</i>
9.00am	Welcome Alan Taylor, <i>Conference Founder & Chair, Managing Director & Metallurgical Consultant, ALTA Metallurgical Services, Australia</i>	
9.15am	<u>Rising Demand Sets Challenges for Innovation in Nickel Sulphate Crystallisation</u> John Warner, <i>Jord Proxa, Australia</i>	
9.40am	<u>Design and Operation of Solvent Extraction Plants Using Two or More Extractant Systems</u> Murdoch Mackenzie & Graeme Miller <i>Murdoch Mackenzie Metallurgy/Miller Metallurgical Services, Australia</i>	
10.30am	<u>Acid Recovery Using Recoflo Ion Exchange</u> Katerina Kryst, <i>Eco-Tec, Canada</i>	
10.55am – 11.25am	MORNING TEA Sponsored by: 	<i>Golden Ballroom</i>
11.25am	<u>Moving Bed Ion Exchange Desorption for Base Metals Processing</u> Volha Yahorava, <i>CleanTeQ Water, Australia</i>	
11.50am	<u>Recovery of Copper from a Process Waste Stream</u> Tomasz Safinsk, <i>ANSTO/Newcrest Mining, Australia</i>	
12.15pm	<u>Lewatit® Chelating and Solvent Impregnated Ion Exchange Resins for the Recovery and Refining of Battery Metals</u> Dirk Steinhilber, <i>Lanxess, Germany</i>	
12.40pm	<u>The Potential to Toll Mill Congo Copper Cobalt Oxide Ore</u> Damian Connelly, <i>METS Engineering, Australia</i>	
1.05pm – 2.00pm	LUNCH Sponsored by: 	<i>Golden Ballroom</i>
2.05pm	<u>A Sustainable Approach to Treating High Arsenic Concentrates Using the Toowong Process™ and the Glasslock Process™</u> Lachlan MacDonald, <i>Core Resources/Dundee Sustainable Technologies, Australia</i>	
2.30pm	<u>Recovery Improvement in Treatment of Refractory Copper Ores Using Elevated Temperature Leaching- A Case of Konkola Copper Mines Zambia</u> Milton Simukoko & Trevor Chalwe, <i>Konkola Copper Mines, Zambia</i>	

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2.55pm	<u>Changes in the Global Mineral Composition of Copper Concentrates</u> Carlos Risopatron , International Copper Study Group, Portugal	
3.20pm – 3.50pm	AFTERNOON TEA Sponsored by: 	<i>Golden Ballroom</i>
3.50pm	<u>A Digital Tool to Optimise Solvent Extraction Performance</u> Andrew Bekle , Solvay, Australia/ USA	
4.15pm	<u>Introduction Of Acorga® CR60LT In The Democratic Republic Of The Congo: A New Additive To Mitigate Crud Formation In SX Operations</u> Aidar Argyn & Andrew Bekle , Solvay/Huayou, Kazakhstan/ Australia/DRC	
4.40pm	Day 2 Concludes	
5.00pm – 7.00pm	Sundowner Sponsored by 	<i>Bar Uma Hotel Lobby</i>

Tuesday 24 May 2022

7.30am	Presenter Briefing	<i>Goldsworthy</i>
8.00am – 5.30pm	Registration Desk Open	<i>Foyer 1</i>
8.30am	Arrival Tea and Coffee	<i>Grand River Foyer</i>
9.00am – 10.30am	OPENING SESSION	<i>Grand River Ballroom</i>
9.00am	Welcome Alan Taylor, Conference Founder & Chair, Managing Director & Metallurgical Consultant, ALTA Metallurgical Services, Australia	
9.05am	<u>Plant Design Considerations for Large-Scale Filtration and Dry Stacking of Copper Tailings</u> Andrew Hawkey, Diemme Filtration, Australia/Italy	
9.30am	<u>Moisture Drainage & Seepage Analysis in Stockpiles</u> Enes Kaya, Jenike & Johanson, Australia/USA	
9.55am	<u>Implementation of Jetti's Catalytic Technology at Pinto Valley Mine to Enable Leaching of Low-Grade Chalcopryrite</u> Nelson Mora, Jetti Resources/Pinto Valley Mining/Worley, USA/Australia	
10.20am	<u>Coupled Dissolution-Precipitation Processes During Chalcopryrite Heap Leaching</u> Eric O. Ansah, University of Melbourne, Australia	
10.45am – 11.15am	MORNING TEA Sponsored by: 	<i>Golden Ballroom</i>
11.15am	<u>Heap Leaching Scale up Phenomena Quantified</u> Petrus van Staden, Mintek, South Africa	
11.40am	<u>Capitalizing on Experience in Advancing the Autoclave Industry through Diversification</u> Jansen Scheepers, Mogas, USA	HPAL FORUM
12.05pm	<u>Valve Evolution in Hydrometallurgy</u> Ross Waters, C. G. Industrial Specialties (CGIS), Canada	
12.30pm	<u>Hydrometallurgical Pilot Plants: What they should, can and cannot do</u> Mark Benz, MRB International Consulting, Canada	
12.55pm – 1.55pm	LUNCH Sponsored by: 	<i>Golden Ballroom</i>
1.55pm	<u>Advancements in Surface Modification for Severe Service Valve Trim</u> Evelyn Ng & Duncan Bews, Callidus Process Solutions/Callidus Welding Solutions, Australia	

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2.20pm	<u>Conversion Of Prony Resources'Goro Plant to Nickel Hydroxide Concentrate Production</u> Adrian Dickison, Beca, New Zealand/Gabriel Bensimon, Prony Resources, New Caledonia		
2.45pm	<u>Benchmarking the HPAL Process</u> Mike Miller, Mike Miller Consultancy Services, Australia		
3.15pm	HPAL Panel		
4.15pm – 4.45pm	AFTERNOON TEA <i>Sponsored by:</i>		<i>Golden Ballroom</i>
4.45pm	Day 3 Concludes		

Wednesday 25 May 2022

Uranium-Rare-Earths

Grand River Ballroom East



7.30am	Presenter Briefing	Goldsworthy
8.00am – 5.30pm	Registration Desk Open	Foyer 1
8.00am	Arrival Tea and Coffee	Grand River Foyer
8:30am – 10:45am	Uranium-Rare-Earths	
8.30am	Welcome to the Uranium-Rare-Earths Conference Alan Taylor, Conference Founder & Chair, Managing Director & Metallurgical Consultant, ALTA Metallurgical Services, Australia	
8.45am	Opening Address: <u>Overview of Current Global Uranium Supply and Demand and Innovations Required for A Sustainable Uranium Industry</u> Adrienne Hanly, IAEA, Austria	
9.15am	Keynote Address: <u>Australia; Creating the Diversity of Rare Earths Supply Necessary for a Sustainable Future</u> Dudley J Kingsnorth, Australian Rare Earths, Australia	
9.55am	<u>Uranium On the Rise - Time for Innovation?</u> Alan Taylor, Conference Founder & Chair, Managing Director & Metallurgical Consultant, ALTA Metallurgical Services, Australia	
10.20am	<u>Innovation and Process Integration in Uranium Ion Exchange</u> Dr Karin Soldenhoff & James Quinn, ANSTO, Australia	
10.45am – 11.10am	MORNING TEA Sponsored by: 	Golden Ballroom
11.10am	<u>First Principles Modelling of the Solvent Extraction and Stripping of Uranium Including Molybdenum Control</u> Kevin Heppner, KWA Kenwalt, Canada	
11.35am	<u>Uranium Extraction Modelling Using Machine Learning</u> Jess Page, WGA, Australia	
12.00pm	<u>Overview of Decommissioning and Potential Remediation of Uranium or Rare Earths Operations</u> Hagen Gunther Jung, GeoEnergy Consult, Germany	
12.25pm	<u>Overview of the Development of Uranium Extraction in Mongolia,</u> Chadraabal Mavag, The Executive Office of the Nuclear Energy, Mongolia	
12.55pm – 1.50pm	LUNCH Sponsored by: 	Golden Ballroom


1.50pm	<u>Overview of the Development of the Central Jordan Uranium Project</u> Mohammad Al-Shannag , <i>Jordan Uranium Mining Company/Jordan University of Science and Technology/Jordan Atomic Energy Commission/IAEA, Jordan/Austria</i>	
2.15pm	Rare Earth Development Forum	
	Efficient Rare Earth Extraction from Mary Kathleen Uranium Process Tailings Via H₂O₄ Baking and Water Leaching James Vaughan , <i>University of Queensland, Australia</i>	
2.40pm	<u>A Flowsheet for Extraction Of Ytterbium From Zircon Tailing</u> Rasoul Hassanalizadeh , <i>MINTEK, South Africa</i>	
3.05pm – 3.30pm	AFTERNOON TEA <i>Sponsored by:</i>	Golden Ballroom
3.30pm	<u>An Overview of the Kanyika Niobium Mine Project in Malawi</u> Rex Zietsman , <i>Globe Metals and Mining, Australia</i>	
3.55pm	<u>Update on Development Status of Nolans Rare Earth Project</u> John Baines , <i>Arafura Resources, Australia</i>	
4.20pm	<u>Rare Earths Processing in Australia</u> Karin Soldenhoff , <i>ANSTO, Australia</i>	
4.45pm	REE Process Development Panel	
5.15pm	Day 4 Concludes	
5.15pm – 6.15pm	Happy Hour	Golden Ballroom

Wednesday 25 May 2022

Gold-PM

Grand River Ballroom West



7.30am	Presenter Briefing	Goldsworthy
8.00am – 5.30pm	Registration Desk Open	Foyer 1
8.00am	Arrival Tea and Coffee	Grand River Foyer
8:30am – 10:45am	Gold-PM	
8.30am	Welcome to the Gold-PM Conference David Dreisinger, University of British Columbia, Canada	
8.45am	Keynote Address: <u>An Engineering Model for Innovation in the Mining Industry</u> John O'Callaghan, Newcrest Mining, Australia	
9.15am	<u>The Effect of Air Sparge Type on Agitator Performance in Gassed Reactors</u> Richard Kehn, SPX FLOW/ Lightnin/Uutechnic, USA/Australia/Finland	
9.55am	<u>Determination of Coarse Gangue Rejection Amenability for Gold and Base Metal Ores</u> Erica Avelar, Curtin University Gold Group, Australia	
10.20am	<u>Predicting Ball Milling Hardness at a Western Australian Minesite</u> Jesse McEwan, Curtin University Gold Group, Australia	
10.45am – 11.10am	MORNING TEA Sponsored by:  Purolite An Ecolab Company Purolite is now part of ECOLAB	Golden Ballroom
11.10am	<u>Oxidation of Ferrous and Cuprous Species in Oxygenated Chloride Solutions: A Kinetic Model Approach</u> Katherine Jaramillo, University of Chile, Chile	
11.35am	<u>Non-Toxic Reagent for Gold Leaching: Clean Mining for Cyanide-Free Gold</u> Kristina Kazakoff, CleanEarth Technologies, Australia	
12.00pm	<u>Gold Leaching and Recovery from Thiosulphate Solution by Mineral Precipitant</u> David Dreisinger, University of British Columbia/Seabridge Gold, Canada	
12.25pm	<u>Recent Advances with The GlyCat™ Process for Extraction of Gold and Silver in The Presence of Copper</u> Glen O'Malley Mining & Process Solutions/ Curtin University, Australia	
12.55pm – 1.50pm	LUNCH Sponsored by:  ENVIRO COPPER THE INDUSTRIAL MINING	Golden Ballroom
1.50pm	<u>Extraction of Gold Using Glycine in the Presence of Permanganate</u> Elsayed Oraby, Curtin University, Australia	

2.15pm	Refractory & Complex Ores Forum	
	<u>Advances in Tellurium for Gold Processing and Exploration</u> Owen Missen, Monash University/Geosciences, Museums Victoria, Australia	
2.40pm	<u>New Developments in Cyanide Management: Cost Effective Detoxification of Cyanide, Cyanate and Thiocyanate by Using Newly Discovered Enzymes</u> Antije Gupta, Cambrex, Germany	
3.05pm – 3.30pm	MORNING TEA <i>Sponsored by:</i>  PuroLite <small>An Ecolab Company PuroLite is now part of ECOLAB</small>	Golden Ballroom
3.30pm	<u>The Behaviour of Stibnite During Gold Processing</u> Olga Bazhko, Mintek/Outotec BIOMIN, South Africa	
3.55pm	<u>Processing Issues with High Silver Gold Ores</u> Damian Connelly, METS Engineering, Australia	
4.20pm	<u>Processing Complex and Refractory Gold Ores</u> Teresa McGrath, Curtin University Gold Group, Australia/ Canada	
4.45pm	Refractory & Complex Gold Ores Panel	
5.15pm	Day 4 Concludes	
5.15pm – 6.15pm	Happy Hour	Golden Ballroom

Thursday 26 May 2022

Grand River Ballroom East

7.15am	Presenter Briefing	Goldsworthy
8.00am – 5.30pm	Registration Desk Open	Foyer 1
7.45am	Arrival Tea and Coffee	Grand River Foyer
8.30am – 10.45am	In-Situ Recovery	
8.15am	<p>Welcome to the In-Situ Recovery Conference Alan Taylor, Conference Founder & Chair, Managing Director & Metallurgical Consultant, ALTA Metallurgical Services, Australia</p> <p>ISR Conference Sponsor Welcome Mining 3 Australia</p>	
8.30am	<p>Keynote Address: <u>Developments in ISR Permeability Enhancement</u> Laura Kuhar, CSIRO, Australia</p>	
9.10am	<p><u>Combining In Situ Recovery and Ion Exchange at the Kapunda Copper Project</u> Jim Wall, Clean TeQ Water /EnviroCopper, Australia</p>	
9.35am		Process Development
9.35am	<p><u>Gold Extraction from Tailings Using Modified ISR Technology</u> Tim Graham, Atom Minerals, Australia</p>	
10.00am	<p><u>Economic Assessment of ISR Projects</u> Maxim Seredkin, CSA Global, Australia</p>	
10.25am	<p><u>Evaluation of In-Situ Barrier Technology for Risk Mitigation and Extraction Optimisation for In-Situ-Recovery Operations – A Review</u> Godfrey Mawire, Curtin University/ CSIRO Mineral Resources, Australia</p>	
10.50am – 11.15am	<p>MORNING TEA Sponsored by:</p>  <p>Puroлите is now part of ECOLAB</p>	Golden Ballroom
11.15am	<p><u>3d Reactive Transport Simulation Of Uranium In Situ Recovery. Large-Scale Wellfield Applications in Shu Saryssu Basin, Tortkuduk Deposit (Kazakhstan)</u> Antoine Collet, ORANO/ PSL University/ Mines ParisTech/ KATCO JV LLP, France/Kazakhstan</p>	
11.40am	<p><u>Simulation of In-situ Recovery of Copper at Kapunda Using COMSOL Multiphysics</u> Leon Faulkner, University of Adelaide/EnviroCopper, Australia</p>	

12.05pm	<p><u>Comparative Closure: Assessing The Biophysical Closure Challenges of Different Mining Methods</u> Ewan Sellers, Mining 3, Australia</p>
12.30pm	<p style="text-align: right;">Permeability Enhancement Forum</p> <p><u>Biomineral Alteration to Create Pathways in Ores to Release Targeted Elements</u> James K Dirstein, Auric BioRecovery Systems/Total Depth, Australia/USA https://az659834.vo.msecnd.net/eventsairseasiaproduct/on-ecw-public/c537c28268ad46418d0c523dc7d3e1dc</p>
1.00pm – 1.55pm	<p>LUNCH Sponsored by:  Golden Ballroom</p>
1.55pm	<p><u>A Numerical Study of Ion/Fluid Flow in Chalcopyrite with Application to Electrokinetic in Situ Recovery</u> Victor Blanca & Kunning Tan, University of New South Wales/ Australian National University/Virginia Tech, Australia/USA</p>
2.20pm	<p><u>Mass Transfer Enhancement using Electrokinetic and Solution Pulsing Methods in In-Situ Recovery of Metals</u> Elahe Karami & Laura Kuhar, Murdoch University/CSIRO Minerals /Curtin University, Australia</p>
2.45pm	<p><u>Experimental Hydraulic Fracturing Technique for Hard Rock In-Situ Recovery Enhancement</u> Hongyi Sun, Curtin University/CSIRO, Australia</p>
3.10pm – 3.35pm	<p>AFTERNOON TEA Sponsored by:  Golden Ballroom</p>
3.35pm	<p>Enhancing ISR Permeability Panel</p>
4.30pm	<p>Day 4 Concludes</p>


Thursday 26 May 2022

Grand River Ballroom West



Lithium & Battery Technology



LANXESS
Energizing Chemistry

7.15am	Presenter Briefing	Goldsworthy
8.00am – 5.30pm	Registration Desk Open	Foyer 1
7.45am	Arrival Tea and Coffee	Grand River Foyer
8.30am – 10.45am	Lithium-Battery Technology	
8.15am	<p>Welcome to the Lithium-Battery Technology Conference Richard Macoun, FBICRC</p> <p>Lithium-Battery Technology Welcome Lanxess</p>	
8.30am	<p>Keynote Address: <u>Trends and Developments in Lithium Processing</u> Grant Harman, Lithium Consultants Australasia, Australia</p>	
9.10am	<p><u>Process Modelling Based Prospective Life Cycle Assessment: A Case Study With Primary Lithium Production</u> Mike Dry, Arithmetek/Minviro, Canada/UK</p>	
9.35am	<p><u>Innovation Driving a Comeback of Western Australian Lithium Projects</u> Damian Connelly, METS Engineering, Australia</p>	
10.00am	<p><u>LieNA® Spodumene Caustic Conversion Process – Initial Piloting</u> Chris Griffith, ANSTO Minerals, Australia</p>	
10.25am	<p><u>Synthesis of Li-Titanate Battery Material</u> Goutam Das, CSIRO Energy/CSIRO Mineral Resources/ Neometals, Australia</p>	
10.50am – 11.15am	<p>MORNING TEA Sponsored by:</p>  <p>PuroLite is now part of ECOLAB</p>	Golden Ballroom
Room:	Grand River Ballroom West	
11.15am	<p><u>The Development of The Battery Grade Lithium Hydroxide Monohydrate Flowsheet to Meet The Demands of Widely Varying Feed Chemistry</u> Nipen M. Shah & Angelo Ridout Jord Proxa, Australia/South Africa</p>	
11.40am	<p><u>New Reagents for Beneficiation of Lithium Ores</u> Tim Walsh, Clariant Mining Solutions, Australia/India</p>	
12.05pm	Battery Technology Development	

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	<u>Techno-Economic Evaluation of a Conceptual Battery Manufacturing Plant</u> Nawshad Haque, CSIRO Energy/CSIRO Mineral Resources/ CSIRO Energy, Australia
12.30pm	<u>State of Lithium-Ion Battery Recycling in South Korea</u> Mookie Bae, Korea Institute of Geoscience and Mineral Resources (KIGAM), South Korea
12.55pm	Lunch Sponsor Golden Ballroom
1.00pm – 1.55pm	LUNCH Sponsored by:  Golden Ballroom
1.55pm	<u>The Development of the Neometals Lithium-Ion Battery Recycling Process</u> Gavin Beer, Neometals Australia (Paper to come)
2.20pm	<u>Potential Future Game-Changers in Battery Technology</u> Professor Guoxiu Wang, UTS Centre for Clean Energy Technology, Australia
2.45pm	<u>The Next-Generation Lithium-Ion Battery</u> Adrian Griffin, Lithium Australia/VSPC Limited, Australia
3.10pm – 3.35pm	AFTERNOON TEA Sponsored by:  Golden Ballroom
3.35pm	<u>Li-ion Recycling Economics – Is Public Policy Needed For Robust Resource Recovery?</u> Joshua Velson, NexantECA, USA
4.00pm	<u>Opportunities for Battery Recycling in Australia</u> Yanyan Zhao, CSIRO Energy/Melbourne University, Australia
4.25pm	Battery Technology Developments Panel
4.55pm	Conference Concludes