Nickel-Cobalt-Copper Conference

Sunday 22 May – Tuesday 24 May

Supported by

SOLVAY
Progress beyond

Opening Presenter

Richard Matheson

Director, Marketing Development at Nickel Institute

Richard has worked in the nickel and stainless steel industries since 1987. He began in Queensland Nickel and consulted on many of the new nickel projects of the era. Richard also established the Australian Stainless Steel Development Association (ASSDA) and has worked with it, mainly as Executive Director, for the past 30 years. During this time he has seen the market for stainless steel in Australia more than double. Richard has extensive knowledge of nickel and its applications and has helped establish and grow markets for nickel-containing products around the world. In 2007 Richard joined the Nickel Institute. Today he leads its global Market Development team to promote the use of nickel in appropriate applications from batteries to wind turbines

Keynote Speaker

Lourdes Valle

Process Engineering Manager at Arafura Resources

Lourdes is a world-class Process Engineer with 19+ years of demonstrated experience in full project lifecycle of integrated process plants. This includes project development, studies and execution, startup, operations and business improvements. Her key career achievements include:

1. Significant contributions to the achievement of above nameplate capacity at Coral Bay Nickel in <2yrs. CBNC is one of the few HPAL operations that is economically and technically successful in the world to-date, with commendable social values.

2. Major contributions to Ambatovy JV debottlenecking in 2015, leading to a successful ramp-up, achievement of financial completion and LME nickel grade registration in <1 year. Lourdes is has recently joined Arafura Resources as part of the owners team for Nolans Project, one of the most advanced REE projects in Australia currently in FEED.

Sunday 22 May 2022

Sponsored by SOLVAY Progress beyond

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***
	Session Chair: Mark Benz, *MRB Consulting, Australia*	
9.00am	**Welcome to ALTA 2022** **Alan Taylor,** *ALTA Metallurgical Services, Australia*	
	Nickel-Cobalt-Copper Conference Sponsor Welcome **Andrew Bekle,** *Technology Solutions – Mining Solutions, Solvay, Australia*	
9.15am	**Opening Address: Nickel: Critical to a Sustainable Future** **Richard Matheson,** *Director, Marketing Development, Nickel Institute, Australia*	
9.45am	***Nickel and Battery Metals*** **Keynote Address: Keys to A Successful Nickel Laterite HPAL Design and Operations: A First Hand Experience** **Lourdes Valle,** *Process Engineering Manager, Arafura Resources, Australia*	
10.25am	**Reprocessing Spent Cathode Material from Lithium-Ion Batteries: Modelling the Aqueous Chemistry of Precipitation (Ipsum Cave – Hic Esse Dracones)** **Mike Dry,** *Arithmetek, Canada*	
10.50am – 11.20am	**MORNING TEA** *Sponsored by* MOGAS®	***Golden Ballroom***
	Chair: Andrew Bekle, *Solvay, Australia*	
11.20am	**A Critical Assessment of Re-Processing the Cathode "Black Mass" from Spent Lithium-Ion Batteries** **Bryn Harris,** *NMR360, Canada*	
11.45am	**The Tech Project – Path to Production** **Boyd Willis,** *Queensland Pacific Metals, Australia*	
12.10pm	**Synchrotron Analyses: Adding Value to Characterisation of Nickel and other Critical Energy-Metals in Mineral Ore and Mining Wastes** **Jessica Hamilton,** *Australian Synchrotron, ANSTO, Australia*	
12.35pm	**Extraction of Nickel and Cobalt from Different Resources Using Alkaline Glycine Solutions** **Elsayed Oraby,** *Curtin University/Western Australian School of Mines, Australia*	
1.00pm – 2.00pm	**LUNCH** *Sponsored by* BASF We create chemistry	***Golden Ballroom***
	Chair: Jessica Hamilton, *Australian Synchrotron, ANSTO, Australia*	
2.00pm	**Digital Transformation using Simulation in a Project Life Cycle** **Rob Winter,** *KWA Kenwalt, Australia*	
2.25pm	**Process and Agitator Design for Industrial Crystallization Processes** **Wolfgang Keller,** *EKATO, Germany*	
2.50pm	**Brazilian Nickel's Piaui Nickel Project - Sustainable Nickel and Cobalt for a Low Carbon Future** **Anne Oxley,** *Brazilian Nickel, UK*	
3.15pm – 3.45pm	**AFTERNOON TEA** *Sponsored by* MOGAS®	***Golden Ballroom***
3.45pm	**The Future of Nickel in a Transitioning World: Modelling the Global Nickel Supply Chain and its Nexus with the Energy System** **Jessie Bradley,** *TU Delft, Netherlands*	
4.10pm	**Deep Sea Polymetallic Nodules: Diversification of Supply** **Chris Duhayon,** *Global Sea Mineral Resources, Canada*	
4.35pm	**Novel Collector Development for Nickel Flotation** **Fatai Kolawole,** *Clariant Mining Solutions, Sweden/India/USA*	
5.00pm	Day 1 Concludes	
5.00pm – 7.00pm	Welcome Reception **Sponsor Address, Edgar Vidal,** *VP Marketing & Business Development. NobelClad, USA*	*Sponsored by* NobelClad *Golden Ballroom*

Monday 23 May 2022

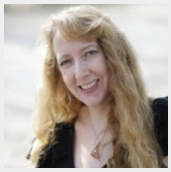
7.30am	Presenter Briefing	*Goldsworthy*
8.00am – 5.30pm	Registration Desk Open	*Foyer 1*
8.30am	Arrival Tea and Coffee	*Grand River Foyer*
9.00am – 10.30am	**OPENING SESSION**	***Grand River Ballroom***
	Session Chair: Mike Dry, *Arithmetek, Canada*	
9.00am	**Welcome** **Alan Taylor**, *ALTA Metallurgical Services, Australia*	
9.15am	**Rising Demand Sets Challenges for Innovation in Nickel Sulphate Crystallisation** **John Warner,** *Jord Proxa, Australia*	***Crystallisation***
9.40am	**Design and Operation of Solvent Extraction Plants Using Two or More Extractant Systems** **Murdoch Mackenzie & Graeme Miller** *Murdoch Mackenzie Metallurgy/Miller Metallurgical Services, Australia*	***Multi Stage SX***
10.30am	**Acid Recovery Using Recoflo Ion Exchange** **Katerina Kryst,** *Eco-Tec, Canada*	***MIon Exchange***
10.55am – 11.25am	**MORNING TEA** *Sponsored by* MOGAS®	***Golden Ballroom***
	Session Chair: Murdoch Mackenzie, *Consultant, Australia*	
11.25am	**Moving Bed Ion Exchange Desorption for Base Metals Processing** **Volha Yahorava,** *CleanTeQ Water, Australia*	
11.50am	**Recovery of Copper from a Process Waste Stream** **Tomasz Safinsk, *ANSTO***/*Newcrest Mining, Australia*	
12.15pm	**Lewatit® Chelating and Solvent Impregnated Ion Exchange Resins for the Recovery and Refining of Battery Metals** **Dirk Steinhilber**, *Lanxess, Germany*	
12.40pm	**The Potential to Toll Mill Congo Copper Cobalt Oxide Ore** **Damian Connelly,** *METS Engineering, Australia*	***Copper Hydromet***
1.05pm – 2.00pm	**LUNCH** *Sponsored by* BASF We create chemistry	***Golden Ballroom***
	Session Chair: Richard Macoun, *FBICRC*	
2.05pm	**A Sustainable Approach to Treating High Arsenic Concentrates Using the Toowong ProcessTM and the Glasslock ProcessTM** **Lachlan MacDonald,** *Core Resources/ Dundee Sustainable Technologies, Australia*	
2.30pm	**Recovery Improvement in Treatment of Refractory Copper Ores Using Elevated Temperature Leaching- A Case of Konkola Copper Mines Zambia** **Milton Simukoko & Trevor Chalwe,** *Konkola Copper Mines, Zambia*	
2.55pm	**Changes in the Global Mineral Composition of Copper Concentrates** **Carlos Risopatron,** International Copper Study Group, Portugal	
3.20pm – 3.50pm	**AFTERNOON TEA** *Sponsored by* MOGAS®	***Golden Ballroom***
	Session Chair: Graeme Miller, *Miller Metallurgical Services, Australia*	
3.50pm	**A Digital Tool to Optimise Solvent Extraction Performance** **Andrew Bekle**, *Solvay, Australia/ USA*	
4.15pm	**The Technological Researches of Crud Formation During Copper Extraction in Kazakhstan SX-EW Plants** **Tatyana Chepushtanova**, *Satbayev University/Murdoch University, Kazakhstan/Australia*	
4.40pm	**Introduction Of Acorga® CR60LT In The Democratic Republic Of The Congo: A New Additive To Mitigate Crud Formation In SX Operations** **Aidar Argyn & Andrew Bekle,** *Solvay/Huayou, Kazakhstan/ Australia/DRC*	
5.05pm	Day 2 Concludes	
5.05pm – 7.00pm	Sponsor Address Sundowner *Sponsored by* jord proxa future focused	*Bar Uma* *Hotel Lobby*

Tuesday 24 May 2022

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 – 10.30am	**OPENING SESSION**	***Grand River Ballroom***
	Session Chair: Lachlan MacDonald, *Core Resources, Australia*	
9.00am	**Welcome** **Alan Taylor**, *ALTA Metallurgical Services, Australia*	
9.05am	**Plant Design Considerations for Large-Scale Filtration and Dry Stacking of Copper Tailings** **Andrew Hawkey,** *Diemme Filtration, Australia/Italy*	***Dry Stacking of Tailings***
9.30am	**Moisture Drainage & Seepage Analysis in Stockpiles** **Enes Kaya,** *Jenike & Johanson, Australia/USA*	***Stockpile Drainage***
9.55am	**Implementation of Jetti's Catalytic Technology at Pinto Valley Mine to Enable Leaching of Low-Grade Chalcopyrite** **Nelson Mora,** *Jetti Resources/Pinto Valley Mining/Worley, USA/Australia*	***Heap Leaching***
10.20am	**Coupled Dissolution-Precipitation Processes During Chalcopyrite Heap Leaching** **Eric O. Ansah**, *University of Melbourne, Australia*	
10.45am – 11.15am	**MORNING TEA** *Sponsored by* MOGAS®	***Golden Ballroom***
	Session Chair: Mile Miller, *Miller Consulting Services, Australia*	
11.15am	**Heap Leaching Scale up Phenomena Quantified** **Petrus van Staden,** *Mintek, South Africa*	
11.40am	**Capitalizing on Experience in Advancing the Autoclave Industry through Diversification** **Jansen Scheepers,** *Mogas, USA*	***Nickel Laterite HPAL Forum***
12.05pm	**Valve Evolution in Hydrometallurgy** **Ross Waters,** *C. G. Industrial Specialties (CGIS), Canada*	
12.30pm	**Hydrometallurgical Pilot Plants: What they should, can and cannot do** **Mark Benz,** *MRB International Consulting, Canada*	
12.55pm – 1.55pm	**LUNCH** *Sponsored by* BASF We create chemistry	***Golden Ballroom***
	Session Chair: Lourdes Valle, *Arafura Resources, Australia*	
1.55pm	**Advancements in Surface Modification for Severe Service Valve Trim** **Evelyn Ng & Duncan Bews,** *Callidus Process Solutions/Callidus Welding Solutions, Australia*	
2.20pm	**Conversion Of Prony Resources'Goro Plant to Nickel Hydroxide Concentrate Production** **Adrian Dickison,** *Beca, New Zealand* / **Gabriel Bensimon,** *Prony Resources, New Caledonia*	
2.45pm	**Benchmarking the HPAL Process** **Mike Miller,** *Mike Miller Consultancy Services, Australia*	
3.15pm	**HPAL Panel** **Facilitated by: Alan Taylor,** *ALTA Metallurgical Services, Australia*	
4.15pm – 4.45pm	**AFTERNOON TEA** *Sponsored by* MOGAS®	***Golden Ballroom***
4.45pm	Day 3 Concludes	

Uranium-Rare Earths Conference

Wednesday 25 May



Opening Presenter

Dr Adrienne Hanly

International Atomic Energy Agency (IAEA)

Adrienne Hanly has over 22 years of global experience as a mining and exploration geoscientist mainly focussing on the uranium production cycle.

Adrienne was born and grew up in a small city on the Canadian prairies. She discovered her passion for geology at Brandon University while taking a part-time evening class in geology while working as a cook.

Her professional career began as a mine geologist in gold, lead and zinc mines which included a gold mine in Manitoba and the world class Sullivan mine in British Columbia, Canada. Her interest in uranium geology and geochemistry started with her Master's thesis research at the Missouri University of Science and Technology in the United States and continued through her PhD studies at Queen's University in Canada. Following her graduate studies, she joined Cameco Corporation in Canada where she worked as an exploration geologist on uranium projects around the world.

In 2011, she joined the International Atomic Energy Agency (IAEA) in Vienna as a Uranium Resource Specialist, where she worked for seven years until she reached the end of her fixed-term contract. After a one-year sabbatical, she returned to the IAEA as an expert consultant and in January 2021, she accepted her current position in the Nuclear Fuel Cycle and Materials Section (NFCMS) in the role of Uranium Production Specialist.

Adrienne is passionate about education and knowledge sharing. She regularly organizes and coordinates training programmes for IAEA Member States around the world and is part of an expert team that coordinates the development of online e-learning modules on the uranium production cycle. In addition, Adrienne is currently on the executive committee of the Women in Nuclear (WiN) IAEA chapter where she is engaged in the development and implementation of mentorship, education and knowledge management initiatives in the nuclear industry.

Opening Presenter

Dudley J Kingsnorth

Non-Executive Chairman of Australian Rare Earths

Dudley Kingsnorth has over 50 years experience in the international mining industry through positions that he has held in operations, project development, marketing, consulting and business development. His employment includes positions held with Bechtel. Alcoa, Shell (Billiton), Rio Tinto, Greenbushes and Ashton Mining. In 1988 he received the Confederation of Western Industry Individual Export Award for his contribution to the development of the global lithium market.

Dudley is recognised as a world authority on the rare earths market and rare earths project development through his 30 year association with the industry, initially as Project Manager of the Mt Weld Rare Earths Project and over the past 20 years as an independent consultant to the industry. He was the author/editor of four editions of the Roskill report on rare earths. Dudley has given many keynote addresses to international rare earths conferences, including the Chinese International Rare Earths Forums in Baotou in 2012 and 2016, the Freiberg Strategic Raw Materials Symposia in 2012 and 2015, several Metal Pages and Metal Events International Rare Earths Conferences. Dudley initiated the first international Critical Minerals Conference (organised through the AusIMM & AIME), which was held in Perth, Australia in 2013. He was appointed the Chairman and Convenor of the conference.

In 2012, Dudley was appointed a Professor at Curtin G.raduate School of Business at Curtin University where he had prime responsibility for establishing The Critical Materials Initiative. More recently he has been appointed a Professor at the Western Australian School of Mines. He is a Past Vice-President of the Australasian Institute of Mining and Metallurgy. Dudley is a Fellow of the Australian Institute of Company Directors and the Australasian Institute of Mining and Metallurgy.

Over the past decade or more Dudley has provided confidential advice and comment to several Government Agencies on the risks that the Rest of the World faces due to China's unhealthy dominance of the global rare earths industry.

In 2014 NATO Science and Technology established a rare earths team to assess the risk to NATO of the limited rare earth supply options. Dudley delivered a keynote address to the first meeting of the team in Brussels outlining the risks of the lack of diversity of supply. Subsequently,

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	**OPENING SESSION**	
	Session Chair: Johan Van Deventer, *Purolite, South Africa*	
8.30am	**Welcome to the Uranium-Rare-Earths Conference** **Alan Taylor,** *ALTA Metallurgical Services, Australia*	
8.45am	**Opening Address: Overview of Current Global Uranium Supply and Demand and Innovations Required for A Sustainable Uranium Industry** **Adrienne Hanly,** *IAEA, Austria*	
9.15am	**Keynote Address:** ***Uranium Processing Innovation*** **Australia; Creating the Diversity of Rare Earths Supply Necessary for a Sustainable Future** **Dudley J Kingsnorth,** *Australian Rare Earths, Australia*	
9.55am	**Uranium On the Rise - Time for Innovation?** **Alan Taylor,** *Conference Founder & Chair, Managing Director & Metallurgical Consultant, ALTA Metallurgical Services, Australia*	
10.20am	**Innovation and Process Integration in Uranium Ion Exchange** **Karin Soldenhoff & James Quinn,** *ANSTO, Australia*	
10.45am – 11.10am	**MORNING TEA** *Sponsored by* Purolite An Ecolab Company	***Golden Ballroom***
	Session Chair: Adrienne Hanly, *IAEA, Austria*	
11.10am	**First Principles Modelling of the Solvent Extraction and Stripping of Uranium Including Molybdenum Control** ***Modellling*** **Kevin Heppner,** *KWA Kenwalt, Canada*	
11.35am	**Uranium Extraction Modelling Using Machine Learning** ***Modellling*** **Jess Page,** *WGA, Australia*	
12.00pm	**Overview of Decommissioning and Potential Remediation of Uranium or Rare Earths Operations** ***U-REE Decommissioning/Remediation*** **Hagen Gunther Jung,** *GeoEnergy Consult, Germany*	
12.25pm	**Overview of the Development of Uranium Extraction in Mongolia** ***Uranium Project Development*** **Chadraabal Mavag,** *The Executive Office of the Nuclear Energy, Mongolia*	
12.55pm – 1.50pm	**LUNCH** *Sponsored by* ENVIRO COPPER THE INVISIBLE MINE	***Golden Ballroom***
	Session Chair: John Baines, *Arafura Resources, Australia*	
1.50pm	**Overview of the Development of the Central Jordan Uranium Project** **Mohammad Al-Shannag,** *Jordan Uranium Mining Company/Jordan University of Science and Technology/Jordan Atomic Energy Commission/ IAEA, Jordan/Austria*	
2.15pm	***Rare Earth Development Forum*** **Efficient Rare Earth Extraction from Mary Kathleen Uranium Process Tailings Via H_2O_4 Baking and Water Leaching** **James Vaughan,** *University of Queensland, Australia*	
2.40pm	**A Comparative Study on Various Commercial Ion Exchange Resins for the Recovery of Heavy REEs from Nitric Acid Media (abstract to come)** **Rasoul Hassanalizadeh,** *MINTEK, South Africa*	
3.05pm – 3.30pm	**AFTERNOON TEA** *Sponsored by* Purolite An Ecolab Company	***Golden Ballroom***
	Session Chair: Dudley Kingsnorth, *Australian RE*	
3.30pm	**An Overview of the Kanyika Niobium Mine Project in Malawi** **Rex Zietsman,** *Globe Metals and Mining, Australia*	
3.55pm	**Update on Development Status of Nolans Rare Earth Project** **John Baines,** *Arafura Resources, Australia*	
4.20pm	**Rare Earths Processing in Australia** **Karin Soldenhoff,** *ANSTO, Australia*	
4.45pm	**REE Process Development Panel**	
5.15pm	Day 4 Concludes	
5.15pm – 6.15pm	Happy Hour	***Golden Ballroom***

Gold-PM Conference

Wednesday 25 May

Opening Presenter

John O'Callaghan

Head of Directional Studies – Metallurgy Newcrest Mining Limited, Australia

John O'Callaghan Head of Directional Studies – Metallurgy Newcrest Mining Limited, Australia Education: B Eng (Chemical) with Distinction Professional Memberships: Fellow AusIMM Previous Affiliations: Outotec, Minara Resources, BHP Billiton, WMC Resources John has over 35 years' experience in the mining industry across a range of commodities including nickel, cobalt, gold, alumina, rare earths, and copper. He has experience in Operations, R&D, Engineering and in equipment and process technology sales, with a number of organisations including Outotec, Minara Resources, BHP Billiton and WMC Resources prior to joining Newcrest Mining as the Head of Directional Studies – Metallurgy. John is primarily a hydro-metallurgist but has been involved with large scale milling and concentrator plants, he holds a Bachelor of Engineering (Chemical) with Distinction and is a Fellow AusIMM.

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	**OPENING SESSION**	
	Session Chair: Teresa McGrath, *Curtin University*	
8.30am	**Welcome to the Gold-PM Conference** **David Dreisinger,** *University of British Colombia, Canada*	
8.45am	**Keynote Address: An Engineering Model for Innovation in the Mining Industry** **John O'Callaghan,** *Newcrest Mining, Australia*	
9.15am	**The Effect of Air Sparge Type on Agitator Performance in Gassed Reactors** **Richard Kehn,** *SPX FLOW/ Lightnin/Uutechnic, USA/Australia/Finland*	***Process Design***
9.55am	**Determination of Coarse Gangue Rejection Amenability for Gold and Base Metal Ores** **Erica Avelar,** *Curtin University Gold Group, Australia*	
10.20am	**Predicting Ball Milling Hardness at a Western Australian Minesite** **Jesse McEwan,** *Curtin University Gold Group, Australia*	
10.45am – 11.10am	**MORNING TEA** *Sponsored by* Purolite An Ecolab Company	***Golden Ballroom***
	Session Chair: Damien Connelly, *Mets Engineering, Australia*	
11.10am	**Oxidation of Ferrous and Cuprous Species in Oxygenated Chloride Solutions: A Kinetic Model Approach** **Katherine Jaramillo,** *University of Chile, Chile*	***Alternative Lixiviants***
11.35am	**Non-Toxic Reagent for Gold Leaching: Clean Mining for Cyanide-Free Gold** **Kristina Kazakoff,** *CleanEarth Technologies, Australia*	
12.00pm	**Gold Leaching and Recovery from Thiosulphate Solution by Mineral Precipitant** **David Dreisinger,** *University of British Columbia/Seabridge Gold, Canada*	
12.25pm	**Recent Advances with The GlyCatTM Process for Extraction of Gold and Silver in The Presence of Copper** **Glen O'Malley** *Mining & Process Solutions/ Curtin University, Australia*	
12.55pm – 1.50pm	**LUNCH** *Sponsored by* Enviro Copper The Invisible Mine	***Golden Ballroom***
	Session Chair: David Dreisinger, *University of British Columbia, Canada*	
1.50pm	**Extraction of Gold Using Glycine in the Presence of Permanganate** **Elsayed Oraby,** *Curtin University, Australia*	
2.15pm	**Advances in Tellurium for Gold Processing and Exploration** **Owen Missen,** *Monash University/Geosciences, Museums Victoria, Australia*	***Refractory & Complex Ores Forum***
2.40pm	**New Developments in Cyanide Management: Cost Effective Detoxification of Cyanide, Cyanate and Thiocyanate by Using Newly Discovered Enzymes** **Antije Gupta,** *Cambrex, Germany*	
3.05pm – 3.30pm	**MORNING TEA** *Sponsored by* Purolite An Ecolab Company	***Golden Ballroom***
	Session Chair: John O'Callaghan, *Newcrest Mining Limited, Australia*	
3.30pm	**The Behaviour of Stibnite During Gold Processing** **Olga Bazhko,** *Mintek/Outotec BIOMIN, South Africa*	
3.55pm	**Processing Issues with High Silver Gold Ores** **Damian Connelly,** *METS Engineering, Australia*	
4.20pm	**Processing Complex and Refractory Gold Ores** **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***

In-Situ Recovery Conference

Thursday 26 May

Supported by mining3

Keynote Presenter

Dr Laura Kuhar

Research Team Leader at CSIRO

Laura is a chemical engineer with over 20 years of research experience in the minerals processing industry. Her main area of focus for a number of years was on in-situ recovery, in a range of fundamental and applied projects. Laura is currently employed by Rio Tinto, where she works in a newly formed R&D team on technologies for decarbonisation and zero emissions, prior to which she worked at the CSIRO, Anglo American and De Beers Consolidated Mines.

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	**OPENING SESSION**	
	Session Chair: Leon Faulkner, *EnviroCopper*	
8.15am	**Welcome to the In-Situ Recovery Conference** **Alan Taylor,** *ALTA Metallurgical Services, Australia* **ISR Conference Sponsor Welcome** Mining 3 Australia	
8.30am	**Keynote Address: Developments in ISR Permeability Enhancement** **Laura Kuhar,** *CSIRO, Australia*	
9.10am	**Combining In Situ Recovery and Ion Exchange at the Kapunda Copper Project** **Jim Wall,** *Clean TeQ Water /EnviroCopper, Australia*	***Process Development***
9.35am	**Gold Extraction from Tailings Using Modified ISR Technology** **Tim Graham,** *Atom Minerals, Australia*	
10.00am	**Economic Assessment of ISR Projects** **Maxim Seredkin,** *CSA Global, Australia*	
10.25am	**Evaluation of In-Situ Barrier Technology for Risk Mitigation and Extraction Optimisation for In-Situ-Recovery Operations – A Review** **Godfrey Mawire,** *Curtin University/ CSIRO Mineral Resources, Australia*	***Permitting Risks & Closure***
10.50am – 11.15am	**MORNING TEA** *Sponsored by* Purolite An Ecolab Company	***Golden Ballroom***
	Session Chair: Jim Wall, *CleanTeQ Water, Australia*	
11.15am	**3d Reactive Transport Simulation Of Uranium In Situ Recovery. Large-Scale Wellfield Applications in Shu Saryssu Bassin, Tortkuduk Deposit (Kazakhstan)** **Antoine Collet**, *ORANO/ PSL University/ Mines ParisTech/ KATCO JV LLP, France/Kazakhstan*	
11.40am	**Simulation of In-situ Recovery of Copper at Kapunda Using COMSOL Multiphysics** **Leon Faulkner,** *University of Adelaide/EnviroCopper, Australia*	***Simulation***
12.05pm	**Comparative Closure: Assessing The Biophysical Closure Challenges of Different Mining Methods** **Ewan Sellers,** *Mining 3, Australia*	
12.30pm	**Biomineral Alteration to Create Pathways in Ores to Release Targeted Elements** **James K Dirstein,** *Auric BioRecovery Systems/Total Depth, Australia/USA*	***Permeability Enhancement Forum***
1.00pm – 1.55pm	**LUNCH** *Sponsored by* ENVIRO COPPER THE INVISIBLE MINE	***Golden Ballroom***
	Session Chair: Laura Kuhar, *RioTinto, Australia*	
1.55pm	**A Numerical Study of Ion/Fluid Flow in Chalcopyrite with Application to Electrokinetic in Situ Recovery** **Victor Blanca & Kunning Tan,** *University of New South Wales/ Australian National University/Virginia Tech, Australia/USA*	
2.20pm	**Mass Transfer Enhancement using Electrokinetic and Solution Pulsing Methods in In-Situ Recovery of Metals** **Elahe Karami & Laura Kuhar,** *Murdoch University/CSIRIO Minerals /Curtin University, Australia*	
2.45pm	**Experimental Hydraulic Fracturing Technique for Hard Rock In-Situ Recovery Enhancement** **Hongyi Sun**, *Curtin University/CSIRO, Australia*	
3.10pm – 3.35pm	**AFTERNOON TEA** *Sponsored by* Purolite An Ecolab Company	***Golden Ballroom***
3.35pm	**Enhancing ISR Permeability Panel** **Facilitated by: Laura Kuhar,** *RioTinto, Australia*	
4.30pm	Day 4 Concludes	

Lithium-Battery Technology Conference

Thursday 26 May

Supported by LANXESS Energizing Chemistry

Keynote Speaker

Grant Harman

Principal at Lithium Consultants Australasia

Grant provides technology in the extraction of lithium from minerals including spodumene, petalite, lepidolite, zinnwaldite and hectorite clay. He was previously Manager Lithium Chemicals for Talison Lithium and was involved in the management of the Talison Lithium Carbonate Plant from Scoping Study to Definitive Feasibility Study. He was involved in the design and technical direction of the Talison Test Facility and has more recently been a technical consultant on the Sonora Lithium Project in Mexico. Grant has had previous roles with UGL, SNC Lavalin, CleanTeq and Ausenco

Thursday 26 May 2022 Lithium & Battery Technology

Grand River Ballroom West

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**	
	Session Chair: Richard Macoun, *FBICRC, Australia*	
8.15am	**Welcome to the Lithium-Battery Technology Conference** **Richard Macoun**, RBICRC **Lithium-Battery Technology Welcome** Lanxess	
8.30am	**Keynote Address: Trends and Developments in Lithium Processing** **Grant Harman,** *Lithium Consultants Australasia, Australia*	
9.10am	**Process Modelling Based Prospective Life Cycle Assessment: A Case Study With Primary Lithium Production** **Mike Dry**, *Arithmetek/Minviro, Canada/UK*	
9.35am	**Innovation Driving a Comeback of Western Australian Lithium Projects** **Damian Connelly,** *METS Engineering, Australia*	
10.00am	**LieNA® Spodumene Caustic Conversion Process – Initial Piloting** **Chris Griffith,** *ANSTO Minerals, Australia*	
10.25am	**Synthesis of Li-Titanate Battery Material** **Goutam Das,** *CSIRO Energy/CSIRO Mineral Resources/ Neometals, Australia*	
10.50am – 11.15am	**MORNING TEA** *Sponsored by* Purolite An Ecolab Company	***Golden Ballroom***
	Session Chair: Goutam Das, *CSIRO Enegry, Australia*	
11.15am	**The Development of The Battery Grade Lithium Hydroxide Monohydrate Flowsheet to Meet The Demands of Widely Varying Feed Chemistry** **Nipen M. Shah & Angelo Ridout** *Jord Proxa, Australia/South Africa*	
11.40am	**New Reagents for Beneficiation of Lithium Ores** **Tim Walsh,** *Clariant Mining Solutions, Australia/India*	
12.05pm	**Techno-Economic Evaluation of a Conceptual Battery Manufacturing Plant** **Nawshad Haque,** *CSIRO Energy/CSIRO Mineral Resources/ CSIRO Energy, Australia*	***Battery Technology Development***
12.30pm	**State of Lithium-Ion Battery Recycling in South Korea** **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* Enviro Copper The Invisible Mine	***Golden Ballroom***
	Session Chair: Chris Griffith, *ANSTO*	
1.55pm	**The Development of the Neometals Lithium-Ion Battery Recycling Process** **Gavin Beer,** *Neometals, Australia*	
2.20pm	**Potential Future Game-Changers in Battery Technology** **Guoxiu Wang,** *UTS Centre for Clean Energy Technology, Australia*	
3.10pm – 3.35pm	**AFTERNOON TEA** *Sponsored by* Purolite An Ecolab Company	***Golden Ballroom***
	Session Chair: Grant Harman, *Lithium Consultants, Australia*	
2.45pm	**The Next-Generation Lithium-Ion Battery** **Adrian Griffin,** *Lithium Australia/VSPC Limited, Australia*	
3.35pm	**Li-ion Recycling Economics – Is Public Policy Needed For Robust Resource Recovery?** **Joshua Velson,** *NexantECA, USA*	
4.00pm	**Opportunities for Battery Recycling in Australia** **Yanyan Zhao,** *CSIRO Energy/Melbourne University, Australia*	
4.25pm	**Battery Technology Developments Panel**	
5.00pm	Conference Concludes	