

About the Conference

ALTA 2021 is a world-class annual metallurgical conference, **celebrating its 26th year**, and a leading platform for innovation.

The emphasis of this carefully crafted program is practical rather than academic, and the themes running through the conference are the various aspects of technology and project development.

The In-Situ Recovery sessions are organised in partnership with **CSIRO Minerals**.

Held over eight days in Perth, the event comprises five technical conferences, three short courses, an international trade exhibition and networking events. It features highly focused programs, topical forums, panel discussions and key international speakers.

This event is an outstanding platform for exposing the latest worldwide developments in plant operations, process technology, new projects, testwork and scale-up, process modelling and control systems, application of mineralogy and geometallurgy, R&D, equipment, reagents, materials, tailings disposal and environmental alleviation.

now receiving abstracts

5 metallurgical conferences • 100 papers • 30 countries • 3 short courses

PROGRAM OVERVIEW							
Saturday 13 Nov	Sunday 14 Nov	Monday 15 Nov	Tuesday 16 Nov	Wednesday 17 Nov	Thursday 18 Nov	Friday 19 Nov	Saturday 20 Nov
Short Course	Short Course	Conference Sessions					Short Course
Treatment of Nickel- Cobalt Laterites	Copper SX/EW Basic Principles and Detailed Plant Design	Nickel-Cobalt-Copper Including Pressure Acid Leaching forum & panel		Uranium- Rare Earths Including Rare Earth Process Development forum & panel in parallel with Gold-PM Including Refractory & Complex Gold Ores forum & panel		In-Situ Recovery Including Enhancing ISR Permeability forum & panel in parallel with Lithium & Battery Technology Including Developments in Battery Technology forum & panel	Heap Leaching & its Application to Copper, Gold, Uranium & Nickel Ores
		Welcome Reception	Conference Dinner		Happy Hour		
		Exhibition					

Thank you to our partners and co-sponsors



Participation

Present

- **Discounted** registration fees for presenters (one per paper).
- Participation in the Presenter Breakfast Briefing, unique to ALTA conferences.
- World-leading exposure through promotion of proceedings after the event, and later via the [ALTA Free Library](#).

Sponsor

- Outstanding **promotional opportunities** including networking functions and conference merchandise.
- Includes one complimentary registration to associated event/s and discount fees for additional staff.
- Promotion via conference website, materials and emails.

Exhibit

- **Trade exhibition** open to external visitors, with free entry during visitor hours.
- Includes one complimentary registration to associated event/s and discount fees for additional staff.
- Promotion via conference website, materials and emails.

Attend

- **Five international conferences** with flexible registration options.
- Three technical short courses before and after the conference.
- Three networking functions.

What do people say about ALTA?

"Undoubtedly, this is the premier conference of its type in our industry"

"Bottom line – I think ALTA is pretty much the best technical conference I've found."

"This must be one of the most professional conferences on the calendar in our field and certainly the best organised."

"It is always a feast for a metallurgist to attend an ALTA conference."

"It is clear that ALTA remains the gold standard for conferences in the field of hydrometallurgy."

"If one is into the hydrometallurgy of Ni-Co-Cu, U-REE, Li, Gold-PM, this is the annual conference to attend."

"The sessions exceeded the highest expectations with pertinent and practical presentations and discussions, knowledgeable industry representatives and service providers with appropriate products."

"ALTA is not only a knowledge hub, but also a gathering place for Hydromet operators and suppliers, exchanging knowledge in the ongoing efforts."

"ALTA is the best value exhibition booth option on the METS circuit by a long way!"

"In hard-nosed financial terms, it pays for itself by many orders of magnitude – in good times and bad times."

Over the past 24 years, 3,471 people from 66 countries have attended ALTA conferences 6,410 times - a true testament to the quality of this world-class annual metallurgical event. [Read our Testimonials](#)

Program Topics

Nickel-Cobalt-Copper

Including Pressure Acid Leaching forum & panel

15-17 November

- Nickel, cobalt and copper extraction and refining
- Pressure leaching
- Heap, tank and vat leaching
- In-situ leaching
- PAL of laterites
- Processing of subsea ores and nodules
- Processing of sulphides - pressure-ox, bio-ox, chloride leach, etc
- Ore upgrading technology
- Plant design and operation reviews and issues
- New and developing projects
- Application of mineralogy and geometallurgy
- Testwork, scale-up, process development and modelling
- Purification, preparation and recovery by SX, IX, EW, precipitation etc
- SX plant fire protection
- Solid/liquid separation and clarification
- Application of membranes
- New technology developments, applications and experience
- Materials of construction and corrosion
- Equipment design and reagent developments
- Tailings disposal and environmental

Uranium-Rare Earths

Including Rare Earth Process Development forum & panel

18 November

- Uranium ore treatment processes
- Recovery and refining of rare earths
- Recovery and refining of scandium
- Operational reviews and issues
- New technology developments, applications and experience
- Ore upgrading technology
- Recovery of other products - vanadium, base metals
- By-product uranium from phosphoric acid, copper leaching, etc
- By-product rare earths
- Plant design
- Application of mineralogy and geometallurgy
- New and developing projects
- Heap, vat and tank leaching
- Testwork, scale-up, process development and modelling
- In-situ leaching
- Solid/liquid separation and clarification
- SX/IX/CIX/RIP/RIL and precipitation processes
- Application of membranes
- Equipment design and reagent developments
- Tailings, environmental and safety issues
- SX plant fire protection
- Materials of construction and corrosion

Gold-PM

Including Refractory & Complex Gold Ores forum & panel

18 November

- Refractory and complex ore treatment - ultrafine grinding, pressure-ox, bio-ox, roasting
- Processes for ores with copper, arsenic, mercury, antimony
- Alternative leaching mediums - chloride, thiosulphate, bromide etc
- Fit for purpose leaching systems
- New and developing projects
- Heap and vat leaching
- Cyanidation, CIP and CIL
- In-situ leaching
- Elution and gold room technology
- Gravity treatment and intensive cyanidation
- Recovery of silver and precious metals
- Application of membranes
- Operation reviews and issues
- Application of mineralogy and geometallurgy
- Cyanide recovery, recycle, detox and alternative reagents
- Solid/liquid separation and clarification
- New technology developments, applications and experience
- Plant design and new project reviews
- Testwork, scale-up, process development and modelling
- Equipment design and reagent developments
- Tailings environmental and safety issues
- Sampling, instrumentation and control

In-Situ Recovery (ISR)

Including Enhancing ISR Permeability forum & panel

19 November

- Developments in uranium ISR
- Application to other metals
- Application to remnant low grade ores and mines
- Technology for enhancing orebody permeability
- Product recovery
- Applications and developments of IX, SX, and membranes
- Operational reviews
- Lessons learned from ISR operations
- Environmental protection and remediation
- Social, community and regulatory aspects
- Alternative lixiviants and leaching chemistry
- Orebody characterisation
- Geometallurgical implications
- Mineral and gangue chemistry
- Application of bio-leaching
- Process monitoring and control
- New and developing projects
- Testwork, design and operation
- Application of simulation and modelling
- Project development and feasibility studies

Lithium & Battery Technology

Including Developments in Battery Technology forum & panel

19 November

- Lithium ore treatment processes
- Recovery of lithium from brines
- Ore preparation and leaching processes
- Purification of leach solutions
- Production of battery grade lithium product
- Battery technology
- Alternatives to lithium
- Battery recycling
- Solid/liquid separation and clarification
- Application of SX and IX
- Application of membranes
- Characterisation of lithium ores
- Operational reviews and issues
- New technology developments, applications and experience
- Ore upgrading technology
- Recovery of other products
- Application of mineralogy and geometallurgy
- New and developing projects
- Testwork, pilot plant design operation and scale-up
- Plant design and construction
- Process development and modelling
- Equipment design and reagent developments
- Tailings, environmental and safety issues
- Materials of construction and corrosion

about us

ALTA Metallurgical Services (**ALTA**) was established in 1985 by Metallurgical Consultant and Managing Director, **Alan Taylor**, to serve the worldwide mining, minerals and metallurgical industries. ALTA offers a wide range of services and resources to the metallurgical industry, including...

consulting

High-level metallurgical and project development [consulting](#).

short courses

Practically oriented live and online [short courses](#) presented by Alan Taylor. Topics include treatment of nickel laterites, copper ore leaching, uranium ore processing, copper SX-EW, heap leaching and solvent extraction.

Conferences

The ALTA conference is a world-class annual metallurgical conference and a leading platform for innovation. The 26th annual event [ALTA 2021](#) will be held 13-20 November. It comprises five international conferences, six short courses, five panel discussions, three technical webinars, and a trade exhibition. It features highly focused programs, topical forums and presentations from key international speakers.

Publications

[Online purchase](#) of technical proceedings and manuals from **ALTA** conferences and short courses.

MetBytes

Free [technical articles](#) offering metallurgical commentary and insights.

free library

Includes proceedings from **ALTA** 1995-2019 Nickel-Cobalt-Copper, Uranium-REE-Lithium and Gold-PM conferences for free download (1650+ papers). The [ALTA free library](#) is expanded regularly, providing a major ongoing free resource to the industry.



Alan Taylor has over 40 years' experience in the metallurgical, mineral and chemical processing industries in Australasia, New Zealand, North and South America, Africa, Asia and Europe. He has worked in metallurgical consulting, project development, engineering/construction, plant operations, plant start-up and technology development. Projects and studies have involved copper, gold/silver, nickel/cobalt, uranium and base metals.

Since 1985, as an independent metallurgical consultant, Alan has undertaken feasibility studies, project assessment, project development, supervision of testwork, flowsheet development, basic engineering, supervision of detailed engineering, plant commissioning and peer reviews and audits. Clients have included a variety of major and junior mining, exploration and engineering companies throughout Australia and overseas.

Alan is Founder and Chair of the annual **ALTA** metallurgical conference.

extensive experience includes

- Gold/Silver
- Copper
- Nickel/Cobalt
- Uranium
- Base Metals
- Leaching: atmospheric, heap, in-place, bio. and pressure
- Cyanidation and CIP/CIL
- Solid/liquid separation
- Flotation
- Electrowinning and electrorefining
- Solvent extraction/ion exchange