FINAL AGENDA

SAVE $400!
Register by August 8

ALTA AMERICAS

Innovation in Mining & Metallurgical Processing

December 9-11, 2025
Caesars Palace | Las Vegas, NV

DECEMBER 9-10

Critical Battery Minerals

DECEMBER 10-11

Nickel-Cobalt-Copper

2025 CONFERENCE TOPICS:

- Lithium Ore and Brine Processing
- Rare Earth, Vanadium and Battery Doping Element Ore Processing
- Graphite Ore Processing
- Solvent Extraction and Ion Exchange Technology and Processes
- Pretreatment and Lixiviants—Processes and Development
- Sustainability and ESG in Mining and Mineral Operations
- Market Trends Driving Extraction Operations
- Nickel-Cobalt-Copper Ore Processing
- Deep Sea Nodule Characterization and Processing
- Plant Design, Construction, and Performance Improvements
- Modelling and Artificial Intelligence in Process Optimization
- Life Cycle Assessments and Feasibility Studies in Metallurgical Operations
- Comminution, Physical Processing, and Froth Flotation
- Leach Processes for Nickel, Cobalt, Copper Mineral Ores
- Pyrometallurgical Processing and Advancements
- Impurity Removal to Meet Commercial Specifications
- Solid/Liquid Separation Processing Advancements
- Tailings and Waste Streams—Management and Reclamation
- Safety Considerations in Metallurgical Processing

#ALTA25

ALTAmet.com

CO-LOCATED WITH:

25th Annual advanced automotive battery conference

Tuesday, December 9

7:00 am Registration and Morning Coffee

7:50 Organizer's Remarks

MARKET DEMAND AND OVERVIEW

7:55 Chairperson's Remarks

David St. Angelo, MS, CTO, Operations and Technology Development, Mangrove Lithium

8:00 From Mine to Market: ESG Stewardship throughout Critical Mineral Supply Chains

Adele Rouleau, Senior Environmental Consultant, Geosyntec Consultants

ESG continues to spark controversy and pushback with changing political landscapes shifting the dial on opinion and policy. The trends, however, are clear that ESG continues to play an important role in securing project finance and derisking projects. An overview of the ESG trends impacting mineral supply chains will be covered, along with strategies which mining companies can implement to ensure sustainable and ESG friendly operations.

8:30 To Fund or Not to Fund? That Is the Question

Michael Dry, PhD, Owner, Arithmetek, Canada

Project economics do not improve substantially as more time, effort, and money go into the project concerned. This presentation is about evaluating the potential economics of new metal extraction/processing projects before the expenditure of significant amounts of money on development and engineering. Selected case studies are used to illustrate the methodology for calculating capital and operating costs, along with revenue, from initial assumptions or limited preliminary data, for preliminary cost modeling.

9:00 Rare Earths: Strategic Upstream Implications

Edward Keith, Head of Consulting Operations, Benchmark Mineral Intelligence

Edward will present Benchmark's outlook on Rare Earth Minerals. He will discuss North America's supply-demand dynamics, highlighting the key challenges and emerging opportunities facing the industry, and how these are expected to develop in the years ahead.

9:30 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

10:10 The Evolving Needs from Critical Battery Minerals in the Energy Transition

Mervyn Stevens, Vice President, Battery Minerals & Materials, Worley

This presentation explores the evolving demand for critical battery minerals in the energy transition, highlighting shifting supply chain dynamics, emerging technologies, and strategies for securing sustainable and resilient mineral sourcing to support global electrification and decarbonization efforts.

10:40 Talk Title to be Announced

William Adams, Head of Base Metals and Principal BRM Analyst, Fastmarkets

11:10 Sponsored Presentation *(Opportunity Available)*

11:40 Networking Luncheon *(Sponsorship Opportunity Available)*

12:10 pm Dessert Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

LITHIUM PROCESSING

12:40 Chairperson's Remarks

Michael Dry, PhD, Owner, Arithmetek, Canada

12:45 Analysis of Lithium Carbonate and Hydroxide Production Routes without Use of Soda Ash and Lime

Peter Ehren, Co-Founder & CTO, Management, Lithium Ark Holding BV

The lithium industry is growing, but the production methods are not improved, and have high environmental impact and excessive production cost. Several production routes are analyzed that do not use soda ash and lime to make battery grade lithium hydroxide and carbonate.

1:15 The Impact to Brine Pre-Treatment and Impurities to Direct Lithium Extraction Effectiveness and Economics

Chris Doornbos, President & CEO & Director, E3 Lithium

A lot of emphasis is placed on the technology choice for Direct Lithium Extraction. However, as the technologies become increasingly ubiquitous, it becomes more apparent what the impact of brine chemistry and more importantly, the impurity removal required, is to make projects successful technically and economically. This talk will discuss some of the more common elements and gasses found in brines that need to be removed to successfully deploy DLE.

1:45 Direct Lithium Extraction by Ion Exchange: Process Development, Scale-Up, and Integration into the Lithium Value Chain

Nicolas Grosso, PhD, Director Innovation, Lilac Solutions

Among direct lithium extraction (DLE) technologies, ion-exchange (IX)—where lithium and protons are selectively exchanged—offers high recoveries, selectivity, low water use, and product flexibility. We will provide a case-study in the development and scale-up of Lilac's IX technology from laboratory to demo scale, and ongoing commercialization efforts. These latter efforts benefit from flexible process chemistries enabled by IX, which contribute to optimized economics at the project level.

2:15 Refreshment Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

2:45 From Rock to Battery: Electrolysis for High-Purity, Battery-Grade Lithium

David St. Angelo, MS, CTO, Operations and Technology Development, Mangrove Lithium

The demand for lithium-ion batteries is driving the need for scalable, sustainable lithium production. This presentation introduces an electrochemical technology, providing a direct, flexible pathway from spodumene-derived intermediates to high-purity, battery-grade lithium hydroxide. An update on Mangrove's first commercial plant in Delta, British Columbia will be shared along with the role of electrochemical refining in simplifying battery materials supply chains.

3:15 Talk Title to be Announced

Gabriel Meruane, PhD, Lithium Processes and Research Manager, SQM

3:45 Sponsored Presentation *(Opportunity Available)*

RARE EARTH PROCESSING

4:15 Using Magnetic Forces and Alternative Ion-Exchange Processing to Enhance Rare-Earth-Element Separations

Michael Free, PhD, Professor, Materials Science and Engineering, University of Utah

Magnetic forces and alternative ion exchange processing can be used to enhance rare earth elements separations. This presentation discusses these new and modified approaches to perform challenging REE separations and presents related results.

4:45 Presentation to be Announced

5:15 Networking Reception in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

6:15 Close of Day

Wednesday, December 10

8:00 am Registration and Morning Coffee

8:20 Organizer's Remarks

TECHNOLOGY IN PROCESS OPTIMIZATION

8:25 Chairperson's Remarks
Adele Rouleau, Senior Environmental Consultant, Geosyntec Consultants

8:30 Sponsored Presentation *(Opportunity Available)*

9:00 Taming Your Autoclave: Turning Data into Knowledge Using AI and Other Tools
Brant Mock, PhD, President, Nova Hydromet
Big data, industry 4.0, AI, and other buzzwords are inundating our industry, but what does it look like to turn huge amounts of data we collect into actionable insights? This presentation explores which autoclave system data nodes may be more important and what tools exist to synthesize that data into knowledge to optimize autoclave process for higher yield and lower downtime. Statistics-based AI models and mathematical/physics-based models will be considered.

9:30 From Barrels to Battery Metals and the Advancement of Predictive Modeling in Mining
Andy Rafal, CEO, OLI Systems
As mining faces harsher ores, brines, and water limits, predictive chemistry offers a proven solution. Borrowing from oil and gas, modeling techniques can help mining engineers reduce risk, extend equipment life, and cut chemical and water waste. This session explores how accurate simulations—not more sensors—can drive the next leap in mining efficiency and environmental performance.

10:00 Sponsored Presentation *(Opportunity Available)*

10:30 Coffee Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

PLENARY KEYNOTE

11:15 Chairperson's Remarks
Craig Wohlers, General Manager, Cambridge EnerTech

11:20 How GM Is Driving Battery Development and Enabling an All-EV Future
Kurt Kelty, Vice President, Battery Cell & Pack, General Motors
GM has established a foundation to accelerate the investment in and development of battery technology with a robust supply chain to support its growth over the next decade. In this talk, Kurt will discuss GM's strategies for investing in new technologies and how its in-house capabilities enhance those efforts, with an overview and rationale behind key investments made to date.

11:50 The Road to Profitable Electrification of Transportation Driven by Innovations in Electrochemistry
Donald Sadoway, PhD, Professor Emeritus of Materials Chemistry, MIT, CSO & Co-Founder, Pure Lithium
Electrification of transportation hinges on innovation in battery chemistry, not only on the vehicle. Installation of charging points would be accelerated by stationary storage on site. If power generation is to be based on carbon-free but intermittent renewables, massive stationary storage is required. These are three different use cases, each optimally satisfied by a different battery chemistry, all of them beyond lithium-ion, priced no more than legacy technology.

12:20 pm How Redwood Materials Is Building a Sustainable Battery Supply Chain
Colin Campbell, CTO, Redwood Materials
In this talk, Colin will discuss Redwood's technology and commercial strategy, highlighting the company's Nevada campus which today is recycling the equivalent of 250,000 EVs worth of material a year and manufacturing cathode active material in the US for the first time.

12:50 Networking Luncheon *(Sponsorship Opportunity Available)*

1:50 Dessert Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)* **with Interactive Roundtables**

Wednesday, December 10

8:00 am Registration Open

2:20 pm Organizer's Remarks

MARKET DEMAND AND OVERVIEW

2:25 Chairperson's Remarks

Sarah Stockwell, PhD, Conference Producer, Cambridge EnerTech

2:30 Energy Transition Upstream Implications

Edward Keith, Head of Consulting Operations, Benchmark Mineral Intelligence

Ed will present Benchmark's outlook on Nickel, Cobalt, and Copper. He will discuss North America's supply-demand dynamics, leveraging insights from Benchmark's newly formed Copper division, highlighting the key challenges and emerging opportunities facing the industry, and how these are expected to develop in the years ahead.

3:00 Presentation to be Announced

3:30 Sponsored Presentation *(Opportunity Available)*

4:00 Refreshment Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

EXTRACTION OPERATIONS FOR THE ENERGY TRANSITION

4:30 The Piauí Nickel Project: Sustainable Nickel and Cobalt for the Energy Transition

Anne Oxley, Founder & CTO, Brazilian Nickel

Brazilian Nickel's Piauí project will produce nickel and cobalt in MHP to feed EV cathode production using a lower-cost, less-energy intensive, simple and flexible heap leaching process. This process is inherently low carbon, but BRN has several work programs looking at innovative ways to reduce the carbon footprint or even eliminate the CO_2 emissions, with a view to becoming a net carbon-zero or even carbon-negative producer.

5:00 Solving Strategic Vulnerability of Battery Metals

Oliver Gunasekara, Co-Founder & CEO, Impossible Metals

Impossible Metals addresses the strategic vulnerability of critical metals. Seabed mining offers a vital solution for America's metal needs. Our system utilizes autonomous underwater vehicles for efficient nodule collection. We project rapid scale-up, aligning with national interest in critical metal feedstocks.

5:30 Talk Title to be Announced

Liz Dennett, PhD, CEO and Founder, Endolith

6:00 Close of Day

Thursday, December 11

8:00 am Registration and Morning Coffee

8:20 Organizer's Remarks

LEACH METHODS

8:25 Chairperson's Remarks

Oliver Gunasekara, Co-Founder & CEO, Impossible Metals

8:30 Sponsored Presentation *(Opportunity Available)*

9:00 Autoclave Letdown: It's Not Just about the Valve

Rob Mock, Director Research & Development, NOVA Hydromet

The level control valve (LCV) is also known as the letdown valve (LDV) in HPAL and POX processes. The two different names indicate multifaceted purposes and natures of these valves and associated systems: letdown systems that are physically interconnected and phenomenologically interrelated, and process control that incorporates data and instrumentation in the realms of control theory and statistical process control. Skilled system implementation reduces process losses and improves equipment life.

9:30 Relining of Pressure Vessels in HPAL and POX

Daniel Keßler, PhD, Managing Director, DSB Säurebau

Autoclaves and pressure vessels are key equipment in HPAL and POX applications. Surface protection linings within these vessels consist of combined linings using membranes and bricks. Due to temperature, pressure, and chemical attacks, several relinings are necessary during the mine lifetime. We show the latest developments and field experience in relining of pressure vessels in Ni, Co, and Au applications.

10:00 Practical Use of CFD Modeling and Pilot Testing for High Pressure Autoclave Mixing Performance Optimization SPXFLOW

Speaker to be Announced, SPX Flow Technology

This presentation will demonstrate the role mixers play in the HPAL process through discussion of real-life examples. This will be done by utilizing CFD to compare different mixing solutions with respect to velocity/energy distribution, acid concentration distribution, and residence time distribution. The latest results of Large Eddy Simulations in an HPAL application will be shared, and finally, the latest results of impeller wearing resistance pilot testing with CFD verification will be reviewed to complete the discussion on the importance of mixers in HPAL

10:30 Coffee & Bagel Break in the Exhibit Hall with Last Chance for Poster Viewing *(Sponsorship Opportunity Available)*

NOVEL METHODS AND PROCESS OPTIMIZATION

11:00 Using Activated-Carbon-Assisted Hydrometallurgical Approaches to Recover Nickel from Mine Tailings

Pengbo Chu, PhD, University of Nevada

This presentation proposes the use of activated carbon as a catalyst with sulfuric acid to enhance the recovery of nickel in a nickel-sulfide rougher flotation tailing. The results show that 98% Ni can be recovered into the solution under certain conditions. The ability of the activated carbon to convert the dissolved ferrous ions into ferric was proposed to be the main reaction for the enhanced metal leaching.

11:30 Crushing Smarter, Not Harder: Revolutionizing Ore Processing Efficiency with Breakthrough Heat Treatment Technology

Carrie Hartford, PE, Director Business Development, Project Engineering, Jenike & Johanson Inc.

Comminution accounts for ~3% of global energy use, making it a key target for decarbonization in the battery supply chain. Microwave pre-treatment can significantly reduce crushing energy, creating micro-fractures that improve grinding, flotation, and leaching efficiency. This talk explores how microwave-assisted comminution enhances the processing of lithium, nickel, cobalt, and graphite, supports new low-emission flowsheets, and offers a path to more sustainable battery materials production.

12:00 pm Refining of Critical Minerals via Electrochemistry and Deep Eutectic Solvents

Larry Spickard, Vice President, Manufacturing, Xerion Advanced Battery Corp.

This presentation explores the electrochemical refining of critical minerals—cobalt, copper, and nickel—from mined ore concentrates. Using deep eutectic solvents and specialized electrodeposition techniques, we

demonstrate a sustainable, selective approach to metal recovery. Results highlight the potential for greener, more efficient refining processes as an alternative to conventional hydrometallurgical and pyrometallurgical methods in critical mineral supply chains.

12:30 Enjoy Lunch on Your Own

1:30 Chairperson's Remarks

Liz Dennett, PhD, CEO and Founder, Endolith

1:35 Unlocking Enhanced Copper and Nickel Recovery through High-Pressure Slurry Ablation (HPSA)

John Lee, COO and Co-Founder, Disa Technologies Inc.

High-Pressure Slurry Ablation (HPSA) is a novel process that uses high-energy particle collisions to liberate valuable minerals without overgrinding. Originally developed for uranium waste, recent testing shows improved copper and nickel recovery through enhanced surface activation and flotation performance. By using the ore as its own grinding media, HPSA reduces consumables and energy use, offering a cost-effective, scalable solution.

2:05 Revolutionizing Equipment Reliability: The Game-Changing Impact of FM-1500 & BM-1600 Coating Technologies

Evelyn Ng, PhD, Group Materials & Innovation Manager, Callidus Group

This presentation highlights the breakthrough FM-1500 & BM-1600 coating technologies, designed to enhance the reliability and lifespan of critical equipment in severe service mining. The session will cover their unique properties, successful case studies, and the significant improvements they bring to operational efficiency, safety, and cost-effectiveness. Attendees will gain insights into how these surface technologies are transforming asset integrity management in extreme service environments.

2:35 Session Break

CLOSING PLENARY PANEL DISCUSSION

2:45 PANEL DISCUSSION: Navigating the Global EV Growth in Harmony with Shifting US Policy, Demanding Energy Security, and Big Data Requirements

Moderator: Christina Lampe-Onnerud, PhD, Founder and CEO, Cadenza Innovation

In a world where EV momentum continues to evolve, the industry is facing great uncertainty in policy and energy priorities. In this Plenary Closing Discussion, we are ending the conference with a thought-provoking and insightful panel of experts led by Christina Lampe-Onnerud.

3:45 Close of Conference

Present a Poster and Save $50

Cambridge EnerTech encourages attendees to gain further exposure by presenting their work in the poster sessions. To secure an onsite poster board and/or ensure your poster is included in the conference materials, your full submission must be received, and your registration paid in full by **November 7, 2025.**

Register and indicate that you would like to present a poster. Once your registration has been fully processed, we will send an email with a unique link and instructions for submitting your abstract and other materials. Please see below for more information.

Reasons you should present your R&D findings at this conference:

- Your research will be seen by leaders from top commercial, academic and government institutes
- Discuss your research and collaborate with interested attendees and speakers
- Your poster will be published in our conference materials
- Receive a $50 discount off your Commercial or Academic/Government registration.

HOTEL & TRAVEL

Conference Venue and Host Hotel:

Caesars Palace

3570 S Las Vegas Blvd
Las Vegas, NV 89109

Discounted Room Rate: $199

Discounted Room Rate Cut-off Date:
November 10, 2025

For hotel reservations, please go to the Travel page of Altamet.com

Top Reasons to Stay at Caesars Palace

- **No Commute,** stay where the conference is being held!
- Caesars Palace features world-class amenities, epic entertainment, energetic nightlife, world-class restaurants and thousands of renovated rooms.
- Offers a wide variety of dining options, including over a dozen full-service restaurants and a celebrity food hall inside.
- Luxurious and immersive experience in the heart of the Las Vegas Strip!

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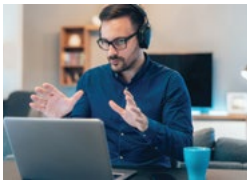
Connect from anywhere. Join via our robust virtual platform and access these dynamic features.



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Sponsorship, Exhibit & Lead Generation Opportunities

Cambridge EnerTech offers diverse sponsorship packages that provide your company the opportunity to showcase your products, services, and solutions to an elite group of delegates. All sponsorship packages are customizable to your company's specific marketing needs and budget.

Podium Presentations

– Available within the Main Agenda!

Showcase your solutions to a guaranteed, targeted audience through a 15- or 20-minute presentation during a specific conference program, breakfast, lunch, or separate from the main agenda within a pre-conference workshop. For the luncheon option, lunches are delivered to attendees who are already seated in the main session room.

Exhibit

Exhibitors will enjoy facilitated networking opportunities with qualified delegates. Speak face-to-face with prospective clients and showcase your latest product, service, or solution.

Invitation-Only VIP Dinner/ Hospitality Suite

Select specific delegates from the pre-registration list to attend a private function at an upscale restaurant or a reception at the hotel. From extending the invitations, to venue suggestions, Cambridge EnerTech will deliver your prospects and help you make the most of this invaluable opportunity.

One-on-One Meetings

Select your top prospects from the pre-conference registration list. Cambridge EnerTech will reach out to your prospects and arrange the meeting for you. A minimum number of meetings will be guaranteed, depending on your marketing objectives and needs. A very limited number of these packages will be sold.

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