Cambridge EnerTech

44TH ANNUAL

March 15 - 18, 2027
Rosen Shingle Creek | Orlando, FL

International Battery SEMINAR & EXHIBIT

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Longest-Running Annual Battery Event

2027 CONFERENCE PROGRAMS:

R&D
- Next-Generation Battery Chemistries
- Lithium-ion Battery Chemistry

MANUFACTURING
- High-Performance Battery Manufacturing
- Global Battery Manufacturing Production

ENGINEERING
- Battery Safety & Engineering
- Global Battery Manufacturing Production

APPLICATIONS
- Advances in Automotive Battery Applications
- Large-Scale Energy Storage
- Battery Power for Consumer Electronics
- Battery Technologies for Military, Drone & Aerospace Applications

RAW MATERIALS SYMPOSIUM

BATTERY VENTURE, INNOVATION & PARTNERING MARCH 15-16, 2027

AI World DATA CENTERS

2027 PLENARY KEYNOTES:



Metal Contamination in Dry Electrode Lithium-ion Batteries
Troy Hayes, PhD, Director of Quality, Tesla



New Science Frontiers in Battery Technologies
Shirley Meng, PhD, The Liew Family Professor, The University of Chicago; Vice President of Industry, Nanyang Technological University



Energy Solution Technologies for the AI Era: Expanding the Value of Advanced Battery Systems
Masato Fujikawa, Director, Energy R&D Center, Panasonic Energy Co., Ltd.



Navigating the Global EV Growth in Harmony with Shifting US Policy, Demanding Energy Security, and Big-Data Requirements
Christina Lampe-Önnerud, PhD, Founder and CEO, Cadenza Innovation

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PLENARY KEYNOTE PROGRAM

TUESDAY, MARCH 16

3:50 Shep Wolsky Battery Innovator of the Year Award Presentation and Chairperson's Remarks
Craig Wohlers, General Manager, Cambridge EnerTech



3:55 Metal Contamination in Dry Electrode Lithium-ion Batteries
Troy Hayes, PhD, Director of Quality, Tesla

Metallic contamination in lithium-ion battery cathodes can cause field failures via internal short circuits. While magnets effectively remove metal particles in wet electrode processing, their efficiency drops significantly in dry processing. Dry methods also increase equipment wear, raising contamination risks. This talk examines how such contamination leads to microshorts, the behavior of microshorts with cycling, and methods to reliably manage metal contaminants in dry manufacturing environments.



4:25 New Science Frontiers in Battery Technologies
Shirley Meng, PhD, The Liew Family Professor, Pritzker School of Molecular Engineering, The University of Chicago; Vice President of Industry, Nanyang Technological University

In this talk, I will discuss a few new perspectives for energy storage materials including new solvation architecture designs for liquid electrolytes and new superionic conductors in soft or hard materials. With recent advances in photon and electron characterization tools and computational methods, we can explore ionic mobility, charge transfer, and ion matter interactions in electrochemical system *in operando*.



4:55 Energy Solution Technologies for the AI Era: Expanding the Value of Advanced Battery Systems
Masato Fujikawa, Director, Energy R&D Center, Panasonic Energy Co., Ltd.

The rapid growth of artificial intelligence is accelerating demand for reliable and sustainable energy infrastructure. Advanced battery technologies are evolving beyond traditional energy storage to become a critical foundation for data centers, mobility, renewable energy integration, and resilient power systems. This presentation explores key technology trends shaping the future of rechargeable batteries, including cell innovation, system integration, safety enhancement, and resource circularity.

THURSDAY, MARCH 18

CLOSING PLENARY PANEL DISCUSSION

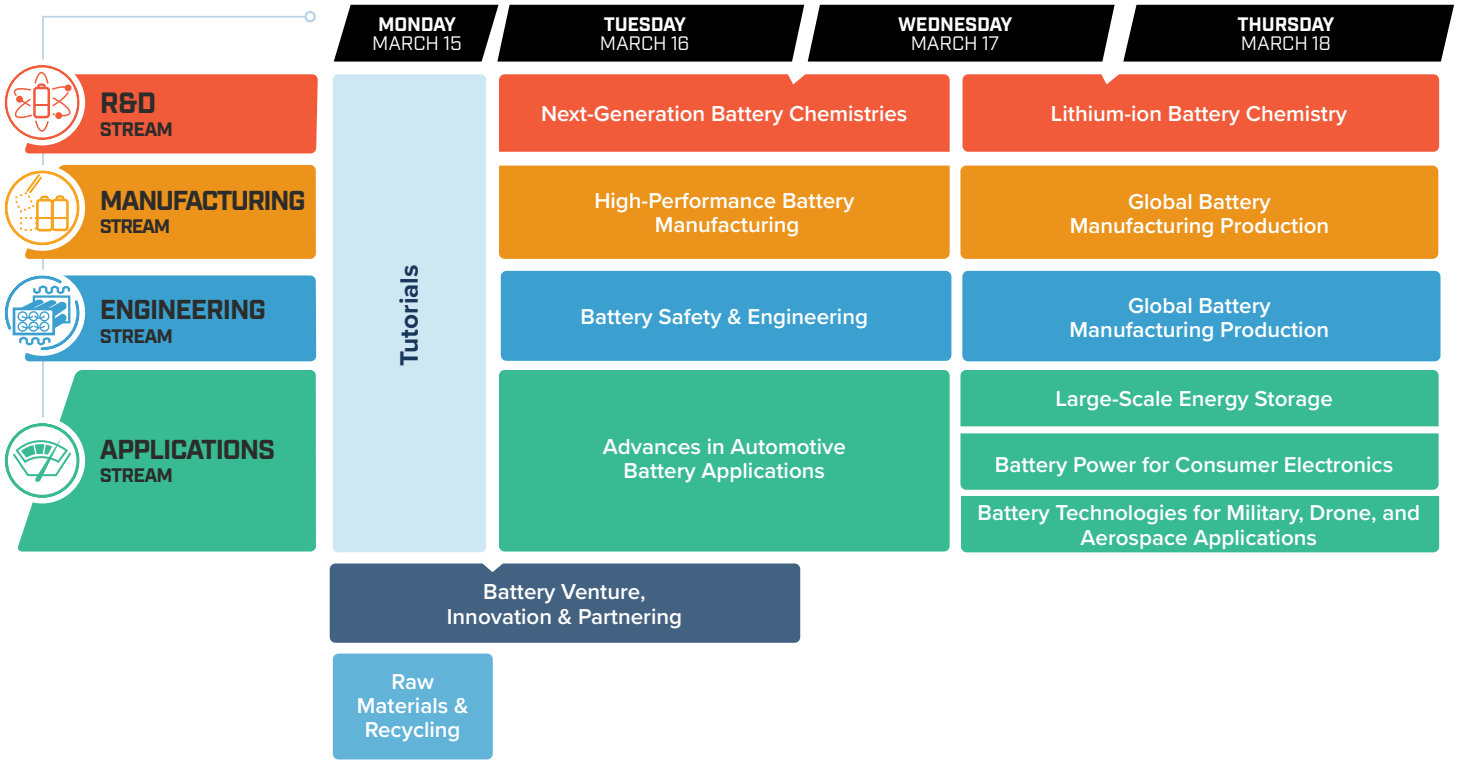
3:30 Navigating the Global Battery Growth in Harmony with Shifting US Policy, Demanding Energy Security, and Big-Data Requirements



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

In this plenary closing discussion, we are ending the conference with a thought-provoking and insightful panel of experts led by Christina Lampe-Önnerud to help us think through: where is the US battery market going in the aftermath of the Big Beautiful Bill and how is this different in Europe and Asia? How do we as an industry navigate these uncertain times?

2026 Conference Programs:
March 15-18, 2027



INTERACTIVE TUTORIALS*

MONDAY, MARCH 15 8:00-9:30 AM

TUT1: Technology Innovation in the China Battery Industry

Instructor:

Mark Lu, PhD, Senior Industrial Analyst, Industrial Economics & Knowledge Center, Industrial Technology Research Institute

TUT2: Battery Safety and Abuse Tolerance Validation

Instructor:

Shmuel De-Leon, CEO, Shmuel De-Leon Energy Ltd.

TUT3: Battery Recycling: Market and Methods

Instructor:

Steve Sloop, PhD, President, OnTo Technology LLC

MONDAY, MARCH 15 10:30 AM-12:00 PM

TUT4: Cathode Active Materials: The Strategic Core of Performance, Cost, and Sustainability

Instructor:

Tom Van Bellinghen, Founder, Lithink

TUT5: Na-ion Batteries: Materials and State-of-the-Art

Instructor:

Philipp Adelhelm, PhD, Professor, Institute of Chemistry, Humboldt-University Berlin

TUT6: Cell & Pack Design

Instructor:

Kevin Konecky, Vice President, Battery Systems Engineering, Spiro

MONDAY, MARCH 15 1:30-3:00 PM

TUT7: Improving the Energy Density of Batteries with Silicon-Based Anodes

Instructor:

Dee Strand, PhD, CSO, R&D, Wildcat Discovery Technologies, Inc.

TUT8: Li-ion Battery Modeling

Instructors:

Gregory L. Plett, PhD, Professor, Electrical & Computer Engineering, University of Colorado, Colorado Springs

Scott Trimboli, PhD, Professor, Electrical & Computer Engineering, University of Colorado, Colorado Springs

TUT9: The Rechargeable Battery Market Value Chain and Main Trends

Instructor:

Michael Sanders, Senior Advisor, Energy, Avicenne Energy

MONDAY, MARCH 15 3:15-4:45 PM

TUT10: AI in Battery Development

Instructor:

Naoki Matsumura, Principal Engineer, Intel

TUT11: Solid-State Batteries

Instructor:

Steven Visco, PhD, CEO & CTO, PolyPlus Battery

TUT12: Li-ion Cell Design and Manufacturing

Instructor:

James Kaschmitter, CEO, SpectraPower LLC

**All Access Registration or separate registration required for Tutorials*

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MONDAY, MARCH 15

7:00 am Registration Open and Morning Coffee

8:20 Organizer's Remarks

BUILDING RESILIENT BATTERY RAW MATERIALS SUPPLY CHAINS

8:25 Chairperson's Remarks
Steve Sloop, PhD, President, OnTo Technology LLC

8:30 Enabling Next-Generation Lithium Batteries through an Upstream Supply-Chain Paradigm Shift
Tobias Glossmann, PhD, Chief Product Officer, Pure Lithium
Lithium typically undergoes multiple concentration, purification, and conversion steps before reaching battery manufacturing, adding cost, energy consumption, material losses, and supply-chain risks. Pure Lithium has developed a direct pathway from aqueous brines to battery-ready lithium, bypassing much of this conventional processing sequence. This presentation introduces the technology and explores its potential implications for lithium production, battery manufacturing, processing efficiency, and supply-chain resilience.

9:00 Diversification Is Not a Supply Chain: What It Takes to Make Battery Raw Materials Strategies Work
Myriam El Kara, Founder & CEO, Sterling Acumen
Governments and manufacturers are seeking to diversify battery raw material supply while imposing increasingly complex requirements around origin, ownership, processing location, and supply-chain security. But identifying alternative supply is not the same as building an executable supply chain. This presentation examines how offtake, financing, local processing requirements, competing buyers, and mineral-market structures determine which diversification strategies can actually work, and where policy ambition collides with project economics.

9:30 Integrating Extraction and Recycling: Building a Resilient Battery Supply Chain
Kimberly Berman, Senior Consultant, Avicenne Energy
The integration of extractive and recycling practices in the battery sector is paramount for the future success of building a diversified global economy. The lessons learned will create a blueprint that can be used for many advanced manufacturing sectors including the energy transition. This presentation will discuss successful case studies of integration and propose specific solutions to build cohesive upstream and midstream supply chains.

10:00 Coffee Break

BATTERY MATERIALS MARKETS, ECONOMICS, AND AFFORDABILITY

10:30 Pricing in the Era of Supply Chain Realignment
Christopher Davis, Regional Director, Metals Pricing Americas, S&P Global
As geopolitics and new investments shift the buildout of battery metals and critical minerals supply chains from Asia to the West, market participants increasingly are looking for independent price references to differentiate material costs between regions. S&P Global Energy Platts discusses price assessments, emerging trends, and what's next for these global markets.

11:00 Can Localized Supply Chains Support Battery Affordability?
Max Reid, Head of Battery Technology and Costs, CRU Group
Policy and corporate strategies aim to localize battery supply chains in North America to reduce bottlenecks and bring economic benefits. However, investment into the supply chain has struggled to keep pace with gigafactory scale-up, resulting in a high reliance on imports of components and materials. This presentation will explore the challenges to localized battery supply chains in North America and how innovation and policy can support greater levels of self-sufficiency.

11:30 The New Inconvenient Truth
Grayson Shor, Executive Director, The Pacific Northwest Battery Collaborative; Co-Founder, Buckstop
Twenty years after *An Inconvenient Truth*, the energy transition has its own: the minerals it needs are already above ground, and we're throwing them away. In 2022, e-waste held $91 billion in recoverable metals, we captured $28 billion. The barrier isn't recycling technology, it's price. Assets valued at zero don't form markets. This talk shows how measurable, defensible valuation turns end-of-life batteries and energy assets into mineral supply.

12:00 pm Presentation to be Announced

6K ENERGY

12:30 Enjoy Lunch on Your Own

ADVANCED RECYCLING AND BATTERY LIFECYCLE

1:25 Chairperson's Remarks
Tobias Glossmann, PhD, Chief Product Officer, Pure Lithium

1:30 Battery Rejuvenation, Deactivation, and Cathode Healing: Preserving Value and Improving Safety in the Lithium-ion Battery Lifecycle
Steve Sloop, PhD, President, OnTo Technology LLC
Battery lifecycle management can reduce liabilities while preserving the value of lithium-ion assets. Rejuvenation restores performance and extends service life; deactivation improves safety when continued use is unsuitable; and direct recycling recovers cathode value. This framework helps fleet operators select the appropriate pathway to manage risk, lower ownership costs, and preserve critical materials.

2:00 Direct Cathode Recycling of Li-ion Batteries from Electric Vehicles
Kulwinder Dhindsa, PhD, Battery Materials & Recycling, Nissan Tech Center North America Inc.
Direct cathode recycling enables recovery of end-of-life lithium-ion batteries while preserving the structural integrity of cathode materials. Demonstrated here is a novel, scalable separation technique that has the potential to produce high-purity cathodes with performance metrics comparable to commercial materials. It is crucial that these recovered cathodes meet next-gen EV targets. Cathode upcycling improves energy density, reduces reliance on raw material mining, and supports a circular supply chain.

2:30 Value Creation through an Integrated Closed-Loop Partnership Strategy
Les Morgret, PhD, Head of Recycling, Commericial, R3 Lithium
This presentation explores how integrated, closed-loop partnerships can create value across the lithium-ion battery lifecycle. Drawing on R3 Lithium's approach, it will examine how collaboration among battery manufacturers, end users, and recycling partners can improve material recovery, strengthen supply-chain resilience, and support a more circular battery economy while creating commercial opportunities for stakeholders across the value chain.

3:00 Refreshment Break

RECYCLING POLICY, COLLECTION, AND SUSTAINABILITY

3:30 DOE Office of Critical Minerals and Energy Innovation Battery Recycling Program and Highlights

Stephanie Spence, Technology Development Manager, US Department of Energy

The U.S. Department of Energy's Office of Critical Minerals and Energy Innovation (CMEI) is advancing America's critical minerals supply chains and accelerating next-generation energy technologies to strengthen our nation's energy security and power our future. Li-ion battery recycling can provide a key source of domestically produced critical materials but faces challenges in costs, performance, and implementation. This presentation will provide an overview of the battery recycling activities across CMEI offices.

4:00 Where Stewardship Meets Safety: The Evolving Landscape of Battery Collection in the United States

Eric Frederickson, Vice President of Operations, The Battery Network

Battery EPR is rapidly taking hold across the US, narrowing the gap with Europe's long-standing producer responsibility systems. As fires and rising logistics costs challenge the waste industry, safe and scalable packaging is becoming the cornerstone of effective stewardship. In this session we will share insights into state legislation, operational challenges, and the packaging innovations that are making next-generation battery collection programs both cost-efficient and resilient.

4:30 Developing Carbon Accounting for Recycled (Secondary) Lithium

Tom Drabble, Global Sustainability Manager, International Lithium Association ILiA

As lithium recycling accelerates, so too does the need to understand and credibly communicate its carbon footprint. This presentation explores the development of the International Lithium Association's Product Carbon Footprint (PCF) Guidance for recycled lithium, building on the association's established guidance for primary lithium. It will highlight the methodological challenges of accounting for recycling processes, and how the guidance can enable more consistent and transparent carbon footprint comparisons.

Next-Generation Battery Chemistries

Advanced Chemistries for High-Performance Energy Storage

MONDAY, MARCH 15

7:00 am Registration and Morning Coffee

5:00 pm Close of Day

TUESDAY, MARCH 16

7:00 am Registration Open and Morning Coffee

8:05 Organizer's Remarks
Craig Wohlers, General Manager, Cambridge EnerTech

SOLID-STATE

8:10 Chairperson's Remarks
Jason Croy, PhD, Group Leader, Materials Research Group, Electrochemical Energy Storage, Argonne National Lab

8:15 Engineering and Optimization of Interfaces for Next-Generation Sulfide Solid-State Batteries
Jiyoon Kim, PhD, Research Scientist, SandboxAQ
Engineering interfaces remain one of the central challenges in realizing the full potential of all-solid-state batteries. This presentation describes a collaborative approach between SandboxAQ and Solid Power, combining advanced atomistic modeling, machine-learned interatomic potentials, and materials design to engineer chemically stable, ionically-conductive interfaces/interphases. We present AQVolt26 as a foundation for accelerating interface optimization to support commercially ready solid-state electrolyte architectures.

8:45 Optimizing Solvent-Free Solid-State Processing through X-Ray Microscopy
Johanna Nelson Weker, PhD, Senior Scientist, SLAC National Accelerator Laboratory
X-Ray microscopy enables the direct visualization of internal structures nondestructively in 3D. Tomography and laminography are two methods for measuring 3D images for different sample geometries. We will present our latest results using lab- and synchrotron-based X-ray tomography and laminography to study how different processing parameters modify the architecture of catholytes and solid electrolytes such as the distribution of active material, density or pore volume, and cathode particle fracturing.

9:15 Unlocking Solid-State Electrolyte Performance and Chemistry through Particle Size Design
Amir Taqieddin, PhD, Principal Scientist, Solid Power
Particle size distribution (PSD) is a critical design variable connecting solid-state electrolyte (SSE) chemistry, wet processing, manufacturability, and cell performance. This talk will discuss modeling, generative AI, and inverse-design approaches for optimizing PSDs in wet-processed SSEs. The framework connects particle-level design with processing, cell, and customer requirements to improve manufacturing robustness, reduce experimental search space, and accelerate development of scalable SSE products.

9:45 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

10:30 Commercializing Lithium-Metal Battery Technology for Electric-Vehicle Applications
Alex Louli, PhD, Senior Applications Engineer, QuantumScape
The next generation of energy storage is being driven by breakthrough solid-state battery technology that overcomes the fundamental limitations of conventional lithium-ion batteries, enabling longer range, faster charging, and enhanced safety through advanced ceramic separator technology. The current challenge facing those developing this technology is commercialization at a global scale to meet the massive global battery demand. This presentation addresses the unique commercialization strategies to bring this technology to market.

11:00 High Energy–Density Solid-State Alkali-Metal-Sulfur Batteries
Arumugam Manthiram, PhD, George T. and Gladys H. Abell Endowed Chair of Engineering, Mechanical Engineering, University of Texas at Austin
Lithium-sulfur and sodium-sulfur batteries are appealing due to the high abundance and low cost of sulfur and sodium. However, they are hampered by persistent polysulfide dissolution and shuttling between the two electrodes. This presentation will focus on the design of sulfur cathode architecture and lithium-rich alloy anodes that enable solid-state cells with fast reaction kinetics, high energy density, and long cycle life at low stack pressures.

SODIUM-ION

11:30 Beyond the Cell: How Sodium-ion Chemistry Enables a New Grid-Storage Architecture
Brandon Kelly, PhD, Chief Scientist, Peak Energy
Thermally stable sodium-ion chemistry offers benefits that extend beyond the cell. It creates an opportunity to rethink the grid storage system. Built around an NFPP cathode and hard carbon anode, Peak Energy's system eliminates active cooling components and associated failure modes, simplifying thermal management, safety design, and permitting. These advantages improve reliability and reduce project costs and total cost of ownership, delivering compelling economics before further cell cost reductions.

12:00 pm Presentation to be Announced

12:30 Networking Luncheon *sponsored by* **EVE Energy Co.**

1:15 Dessert Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

LITHIUM-SULFUR

1:45 Chairperson's Remarks
Arumugam Manthiram, PhD, George T. and Gladys H. Abell Endowed Chair of Engineering, Mechanical Engineering, University of Texas at Austin

1:50 Cheaper than LFP: Can Aqueous Lithium-Sulfur Break the Cost Floor for Stationary Storage?
Steven Visco, PhD, CEO & CTO, PolyPlus Battery
Lithium in aqueous Li-ion/sulfur grid batteries is recoverable inventory, not a consumed cathode constituent. Dissolved in the catholyte, it returns as LiOH or Li2CO3 by simple precipitation, unlike lattice-bound lithium in LFP, where recovery is hydrometallurgically costly and economically marginal. Combined with sulfur sourced from waste H2S, this yields near-zero active-material cost, a lifecycle lithium cost well below LFP, and enables a lithium-lease structure that removes lithium from cell COGS entirely.

NEXT-GENERATION BATTERY R&D

2:20 Vertical Extrusion for Dry Battery Components: High-Tech & Low-Cost
Victoire De Margerie, PhD, Executive Chairman, Rondol Industrie SAS

This presentation highlights the advantages of vertical extrusion for continuous manufacturing of dry components, including optimized material flow, precise temperature control, flexible multi-zone dosing, and enhanced mixing performance. It also demonstrates reductions in both capital and operating costs through a much smaller dry room footprint and reduced waste. It will also outline ongoing research for optimizing anode dry coating and separator production while advancing the understanding of polymer–active material interactions.

2:50 Earth-Abundant Cathode-Active Materials: Research and Development Efforts at Argonne National Laboratory
Jason Croy, PhD, Group Leader, Materials Research Group, Electrochemical Energy Storage, Argonne National Lab
The Vehicle Technologies Office (US DoE) has established a consortium of six national laboratories to address the challenges of enabling sustainable cathode technologies. This consortium is focusing efforts across a wide range of materials and technology readiness levels. In this presentation, we will discuss ongoing efforts within the program aimed at the design, synthesis, and characterization of Mn-rich cathodes as alternative, next-generation materials.

3:20 Recharge Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

PLENARY KEYNOTE

3:50 Shep Wolsky Battery Innovator of the Year Award Presentation and Chairperson's Remarks
Craig Wohlers, General Manager, Cambridge EnerTech



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4:25 New Science Frontiers in Battery Technologies
Shirley Meng, PhD, The Liew Family Professor, Pritzker School of Molecular Engineering, The University of Chicago; Vice President of Industry, Nanyang Technological University
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4:55 Energy Solution Technologies for the AI Era: Expanding the Value of Advanced Battery Systems
Masato Fujikawa, Director, Energy R&D Center, Panasonic Energy Co., Ltd.
The rapid growth of artificial intelligence is accelerating demand for reliable and sustainable energy infrastructure. Advanced battery technologies are evolving beyond traditional energy storage to become a critical foundation for data centers, mobility, renewable energy integration, and resilient power systems. This presentation explores key technology trends shaping the future of rechargeable batteries, including cell innovation, system integration, safety enhancement, and resource circularity.

5:25 Connect & Engage Reception in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

6:30 Close of Day

WEDNESDAY, MARCH 17

7:30 am Registration Open and Morning Coffee

7:55 Chairperson's Remarks
Brandon Kelly, PhD, Chief Scientist, Peak Energy

8:00 Presentation to be Announced

8:30 Constructing Robust Interphases for High Performance Lithium Metal Batteries
Xiangbo Meng, PhD, Professor, Mechanical Engineering, University of Arkansas Fayetteville
Interphases are essential for reversibility of rechargeable batteries while their stability and properties are determinant to long-term cell performance. To this end, it is very challenging to establish stable interphases for lithium metal batteries (LMBs). In searching for solutions, we uniquely constructed artificial solid electrolyte interphases of ion-conducting polymers for lithium anodes and artificial cathode electrolyte interphases of oxygen-scavenging sulfides for cathodes. They are compatible and complementary for high-performance LMBs.

9:00 Optical Characterization of Ion Batteries
Yan-Kai Tzeng, PhD, Associate Scientist, SLAC-Stanford Battery Research Center Applied Energy Division, SLAC National Accelerator Laboratory
Traditional battery characterization methods rely on ensemble averaging, obscuring the local solvation, de-solvation, and transport dynamics of individual ions at liquid-solid interfaces. We introduce an operando optical platform using fluorescent defects in hexagonal boron nitride (h-BN) as single-ion sensors to track ionic behavior in real time with millisecond temporal resolution. By measuring ion-induced spectral shifts, this method directly probes local solvation structures and interfacial electrodynamics vital for next-generation battery chemistries.

9:30 Presentation to be Announced

10:00 Presentation to be Announced

10:15 Coffee Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

MARKET APPLICATIONS

11:05 Batteries for Electric Vertical Take Off and Landing
Ilias Belharouak, PhD, Section Head, Electrification and Energy Infrastructure Division, Oak Ridge National Laboratory

Electric vertical take-off and landing (eVTOL) aircraft place extreme demands on batteries: high specific energy, high power for hover and landing, fast charging, and uncompromising safety. This talk reviews chemistries, design trade-offs, certification requirements, and pathways to viable eVTOL batteries.

11:35 Where Battery Innovation Wins: Matching Technology to Application

Abhirabh Basu, Senior Analyst, Lux Research

No single chemistry is positioned to replace lithium-ion across electric vehicles, stationary storage, and specialized applications by 2030. This presentation compares advances in lithium-ion cells with sodium-ion, lithium-sulfur, and lithium-metal or solid-state batteries against application requirements, manufacturing readiness, qualification evidence, and system economics. It identifies each pathway's most credible first markets, where improving incumbent cells remains difficult to beat, and the evidence needed to substantiate commercial claims.

12:05 pm Modeling and Simulation for Next-Generation Battery Development COMSOL

Niloofar Kamyab, Technical Product Management Lead, Product Management, COMSOL Inc.

As the industry moves beyond traditional lithium-ion batteries to meet the demand for high-performance, sustainable, and safe energy storage solutions, modeling and simulation can play a critical role in accelerating the development of next-generation battery technologies, such as solid-state, sodium-ion, and lithium–sulfur batteries. COMSOL Multiphysics® provides a flexible framework for modeling a wide range of battery chemistries, with customizable descriptions of electrolyte transport, electrode reaction kinetics, thermodynamics, and other chemistry-specific phenomena. In this session, we will discuss how these capabilities can help the battery industry explore emerging technologies, identify performance limitations, and evaluate design tradeoffs to guide the development of these technologies.

12:35 Networking Luncheon *(Sponsorship Opportunity Available)*

1:20 Dessert Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

1:50 Close of Conference

R&D STREAM

Lithium-ion Battery Chemistry

Driving Innovation in Lithium-ion Chemistries and Electrochemical Performance

WEDNESDAY, MARCH 17

12:35 pm Registration Open

12:35 Networking Luncheon *(Sponsorship Opportunity Available)*

1:20 Dessert Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

IMPROVING BATTERY PERFORMANCE

1:50 Chairperson's Remarks
Benjamin Park, PhD, CEO, Enevate Corp.



1:55 KEYNOTE PRESENTATION: Next-Generation Advanced Lithium-ion Batteries
Khalil Amine, PhD, Group Leader, Advanced Battery Technology, Argonne National Laboratory
In this talk, we will present a) an advanced PEDOT coating technology at the particle level to fully protect the cathode, b) a novel nonflammable high-voltage electrolyte that is compatible with lithium metal, c) an Ni-rich low cobalt dual mode gradient, d) an Mn-rich multistage gradient structure cathode, and e) a silicon graphene composite anode with a novel pre-lithiation technology.

2:25 Development of Long-Life Li/SPAN Batteries
Ping Liu, PhD, Professor and Director, Sustainable Power and Energy Center, University of California, San Diego
Solid state metal-sulfur batteries have long suffered from poor performance due to the low reactivities of both elemental sulfur (S) and lithium sulfide (Li2S). To address these challenges, we have been exploring doping S and Li2S with halides and/or transition metals to enhance their ionic and electronic conductivity, alter reaction pathways, minimize volume changes, and even enable thermal annealing to reverse degradation.

2:55 Sponsored Presentation *(Opportunity Available)*

3:25 Recharge Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

3:55 Molecular, Liquid-State, and Solid-State Electrolytes for High-Voltage Lithium Batteries across a Wide Temperature Range
Yaser Abu-Lebdeh, PhD, Senior Research Officer & Team Leader, Clean Energy Innovation Research Center, National Research Council Canada
This presentation highlights advances in molecular, liquid-state, and solid-state electrolytes for high-voltage lithium batteries operating across a wide temperature range, including low-temperature conditions. Key strategies include controlling ion solvation, engineering stable electrode–electrolyte interphases, and suppressing dendrite formation in lithium metal cells. Recent examples featuring dinitrile-, sulfone-, and ether-based electrolytes demonstrate improved safety, stability, ionic transport, and performance for next-generation high-voltage cathodes and lithium metal anodes.

4:25 Accelerating Lithium-ion Battery Innovation via High-Throughput Experimentation and AI-Powered Predictive Modeling
Dee Strand, PhD, CSO, R&D, Wildcat Discovery Technologies, Inc.
Lithium-ion batteries are complex systems, and their development still depends heavily on physical experimentation. Wildcat's high-throughput platform accelerates research by generating reproducible, cross-comparable data from both successful and unsuccessful tests. By augmenting this platform with AI, we aim to improve research efficiency and predictive modeling. This presentation highlights Wildcat's approach, data system, and lessons learned from deploying machine-learning models.

4:55 LFP/LMFP Synthesis
Mickael Dollé, PhD, Professor, Department of Chemistry, Université de Montréal
Conventional LFP/LMFP synthesis via solid-state or hydrothermal routes demands fine precursors and slow, costly processing. Unlike oxide cathodes, LFP/LMFP has a low congruent melting point, enabling a homogeneous molten medium for rapid, thermodynamically-driven reactions. Our patented melt-synthesis process exploits this, achieving synthesis within minutes while tolerating diverse precursor chemistries, purities, and morphologies. This flexibility lowers environmental impact and simplifies recycling of off-spec and spent-battery materials.

5:25 Close of Day

THURSDAY, MARCH 18

7:00 am Registration Open and Morning Coffee

INTERACTIVE LEADERSHIP BREAKFAST

7:25 Powering Impact: An Interactive Session on Technology, Market Strategy, and Execution in the Battery Economy



Moderator: Christina Lampe-Önnerud, PhD, Founder and CEO, Cadenza Innovation
The session will center on three practical dimensions: how to position technical concepts in terms of customer value and cost-performance; how to communicate with credibility to executives, investors, and commercial partners; and how project leadership translates vision into milestones that matter.

IMPROVING BATTERY PERFORMANCE

8:25 Chairperson's Remarks
Dee Strand, PhD, CSO, R&D, Wildcat Discovery Technologies, Inc.

8:30 Unexpected Gassing Phenomena in High-Voltage Li-ion Cells
Michael Metzger, PhD, Associate Professor, Dalhousie University
Interfacial reactions in Li-ion cells almost always generate gases. By measuring the quantity and type of gases we can understand these reactions. At Dalhousie University we built a novel multi-channel Online Electrochemical Mass Spectrometer that can sample gases from up to six battery cells simultaneously and enable electrolyte additive screening. We will explain how this system helps us to understand the reaction mechanisms of new additives for high-voltage Li-ion cells.

9:00 Cryogenic and Automated Multiscale Microstructural Characterization of Battery Electrodes
Katherine Jungjohann, PhD, Group Manager, Microscopy, Imaging, and Characterization for Renewables, National Renewable Energy Laboratory (NREL)
Electrode performance is dependent on multiscale factors that modify ion and charge transport during cycling. Cross-sectioning of intact coin cells and electrodes with cryogenic electron microscopy workflows can identify cathode particle microstructure, degradation, and the formation of cathode–electrolyte interphases that can change the local charge transport pathways and lead to increased Li-ion transfer impedance. Our automation of these multiscale workflows is enabling rapid evaluation and feedback on battery design.

9:00 Battery Booth Crawl with Bagels in the Exhibit Hall with Last Chance for Poster Viewing

9:30 Sponsored Presentation *(Opportunity Available)*

10:00 Battery Booth Crawl Continues in the Exhibit Hall with Last Chance for Poster Viewing

10:45 Moving beyond the Energy–Power Compromise: 20 Years and 700 Patents (Pending and Issued)—Delivering a New Architecture

Benjamin Park, PhD, CEO, Enevate Corp.

Energy density and rate capability have long been competing design goals in lithium-ion cells, with fast charge further limited by lithium plating. This talk presents a cell architecture developed over two decades that delivers fast charge and fast discharge while achieving ultra-high energy densities. We cover the design principles enabling this never-before-seen combination of specifications, the constraints that remain, and technology transfer to a manufacturing licensee.

11:15 Directional Ice Templating Makes Water Solvent in NMC and LFP System Possible

Guanting Li, PhD, Research Associate, Materials, Imperial College London

Different from conventional slurry coating methods, we applied a new electrode fabrication directional ice templating. In this method, DI water is used as solvent which eliminates the need for hazardous NMP solvent. The exposure time between the aqueous solvent and electrode materials is strictly controlled to minimize potiential side reactions.

11:45 Sponsored Presentation *(Opportunity Available)*

12:15 pm Enjoy Lunch on Your Own

ANODES

1:10 Chairperson's Remarks

Michael Metzger, PhD, Associate Professor, Dalhousie University

1:15 From Refinery to Cell: The Hidden Petcoke Constraint behind Lithium-ion Anodes

Epica Mandal Sarkar, Senior Management Consultant, Market Services, Worley

Lithium-ion battery growth is commonly viewed through cathode materials, yet every cell relies on graphite anodes. This presentation explores how battery-grade graphite production depends on petroleum coke, a refinery by-product with limited and competing end uses. Covering regional supply-demand dynamics, synthetic and natural graphite pathways, emerging anode technologies, and carbon intensity, the session highlights why petcoke availability may become a critical determinant of future battery supply chains.

1:45 Disruptive Si/C Nanocomposite Anodes Poised for Market Dominance

Gleb Yushin, PhD, Professor, Georgia Institute of Technology

The pace of advancements in intercalation-type lithium-ion batteries (LIBs) has significantly slowed as conventional electrode materials approached their theoretical limits. By inventing and successfully commercializing chemical vapor deposition (CVD)-enabled nanostructured silicon/carbon (Si/C) composite materials (US Patents with 2009-2013 priorities: US 8,889,295B2; US 2014/0057179 A1; US20230343939A1), our team unlocked a new performance standard. This Si/C technology is quickly replacing graphite in commercial phones, drones, power tools, transportation and even grid.

CATHODES

2:15 Optimizing Materials and Cell Design to Take Full Advantage of LMR Cathodes

Jay Whitacre, PhD, CEO/CTO, Stratus Materials; Full Professor, Materials Science and Engineering, Carnegie Mellon University

Lithium-rich, manganese rich (LMR) cathode materials have attributes that can result in highly advantaged lithium ion cells, and this class of materials requires sometimes unexpected design attributes to achieve optimal performance. This talk explores how an advanced LMR CAM, LXMO produced by Stratus Materials, can be implemented in high performance cells that allow for cells to be produced with the cost and safety of LFP along with NMC energy densities.

2:45 Probing Li-ion Transport in High-Mass-Loading Cathodes for All-Solid-State Batteries

Yuepeng Zhang, PhD, Group Leader, Nanocomposite Materials and Membrane Manufacturing, Argonne National Laboratory

This study investigates lithium-ion transport limitations in high-mass-loading all-solid-state battery (ASSB) cathodes, a commonly observed challenge that constrains ASSB rate capability and capacity utilization. Laser-induced breakdown spectroscopy (LIBS) was used to probe lithium distribution and transport behavior, revealing clear evidence of nonuniform lithiations across cathode thickness. Potential strategies to mitigate these transport limitations will be discussed.

3:15 Transition to Closing Plenary

CLOSING PLENARY PANEL DISCUSSION

3:30 Navigating the Global Battery Growth in Harmony with Shifting US Policy, Demanding Energy Security, and Big-Data Requirements



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

In this plenary closing discussion, we are ending the conference with a thought-provoking and insightful panel of experts led by Christina Lampe-Önnerud to help us think through: where is the US battery market going in the aftermath of the Big Beautiful Bill and how is this different in Europe and Asia? How do we as an industry navigate these uncertain times?

4:30 Close of Conference

High-Performance Battery Manufacturing

Global Production of Safe, Efficient, Higher Energy Density Batteries

MONDAY, MARCH 15

7:00 am Registration and Morning Coffee

5:00 pm Close of Day

TUESDAY, MARCH 16

7:00 am Registration Open and Morning Coffee

8:05 Organizer's Remarks

ADVANCES IN CELL MANUFACTURING

8:10 Chairperson's Remarks

Michael Wang, PhD, Group Center Director & Distinguished Fellow, Systems Assessment Center, Argonne National Laboratory

8:15 Scaling the Future: Overcoming Hurdles in Powder-to-Electrode Dry Coating

Hieu Duong, PhD, Chief Manufacturing Officer, AM Batteries

As the battery manufacturing becomes increasingly competitive, AMB's Powder to Electrode dry coating technology offers a crucial path forward. This presentation explores engineering challenges and solutions required to commercialize dry electrode production. Backed by performance data and superior economics, we demonstrate how this technology justifies industry-wide adoption. This session delivers insights for OEMs, battery manufacturers, investors, and ecosystem newcomers aiming to scale production while aggressively reducing costs and environmental impact.

8:45 Designing and Manufacturing High-Energy-Density 21700 Cells at Scale

Stefan Permien, CEO, UniverCell Holding GmbH

UniverCell's CEO Stefan Permien will share the company's experience developing a high-energy-density 21700 cell and scaling its manufacturing capabilities in Germany. The cell combines a tabless architecture with a lightweight housing, achieving a nominal capacity of 6 Ah and gravimetric energy density of >330 Wh/kg. Stefan will also discuss UniverCell's ongoing development of dry-coated electrodes, including the opportunities and practical considerations involved in bringing this technology toward industrial production.

9:15 The Electrochemistry Foundry: Bridging the Gap between Lab-Scale Innovation and High-Volume Manufacturing

Brenna Teigler, PhD, Co-Founder & CEO, Electrochemistry Foundry

Electrochemistry Foundry (ECF), a new nonprofit in Hayward, California, accelerates battery commercialization by providing industry-grade pilot production, cell design, and supply-chain support. In this session, we share strategies for rapidly standing up a pilot line, implementing an R&D-first manufacturing execution system (MES), and maintaining quality across varied chemistries and form factors. Learn how startups, cellmakers, and end users can all benefit from partnering with ECF.

9:45 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

10:30 Dense Energy Empowers the Future EVE Energy

Speaker to be Announced, EVE Energy Co Ltd

With the rapid development of AI, higher requirements are placed on lithium batteries. Higher energy density, output power, lighter weight, smaller size, and diverse forms represent next-gen upgrades for AI-era lithium batteries. This presentation focuses on two cutting-edge technologies from our company: solutions based on silicon-carbon and lithium-metal materials. Our optimized silicon-anode design with high-voltage LCO cathodes reduces charging time by 80%, increases energy density by over 16%, and improves lifespan by >16%. Compared to silicon-carbon, lithium-metal anodes boost energy density by 50%. We achieved a critical breakthrough: at 0.5C charge / 1C discharge, our lithium-metal batteries' cycle life improved by 30%. Finally, we envision that combining all-solid-state and shaped batteries is the ideal dense energy solution. Our company is developing these technologies for applications in humanoid robots and brain-computer interfaces, driving industry progress.

11:00 From Factory Data to Factory Intelligence: Practical AI Applications in Battery Manufacturing

Katharina Gerber, Global Battery Industry Developer, Siemens

Gigafactories generate vast amounts of engineering, manufacturing, quality, and enterprise data, yet much of it remains disconnected. This presentation explores the practical applications of AI that connect these data sources to create meaningful factory context. Examples include golden batch analysis, predictive maintenance, and engineering change assessment. The focus is on how AI-powered digital tools can help teams understand what is happening on the factory floor and determine what to do next.

11:30 Beyond Gigafactories, One Year on: Where Is Specialist Battery Value Emerging?

James Hoxey, Director, Monkscroft Advisory, Ltd.

In the 2026 edition, we discussed that aerospace, defense, and performance programs offer value that cannot be measured purely through gigafactory-scale economics. This presentation revisits that thesis using a further year of direct market evidence, examining how changing investment conditions, supply-chain priorities, technology maturity, and customer procurement behavior are reshaping the commercial opportunity for specialist battery manufacturers and technology providers.

12:00 pm Presentation to be Announced RELIANCE

12:30 Networking Luncheon *sponsored by* **EVE Energy Co.**

1:15 Dessert Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

NEXT-GENERATION BATTERY-CELL DEVELOPMENT

1:45 Chairperson's Remarks

Simon Buderath, Strategy & Technology Consulting, P3 USA

1:50 Mitigating Thermal Runaway in LIBs by Using an Integrated Protective Layer

Ramin Amin-Sanayei, PhD, Senior Principal Scientist, Battery Group, Arkema

To address growing safety demands for high-energy-density lithium-ion batteries, we developed iPlus, a thin integrated protective layer (2-15 µm) that electrically isolates electrodes during mechanical or thermal abuse, preventing hard internal shorts and thermal runaway without compromising performance. Roll-to-roll manufactured 2 Ah and 10 Ah pouch cells incorporating iPlus successfully passed nail penetration tests with no fire or thermal runaway, demonstrating scalable, manufacturable, and highly effective safety enhancement.

2:20 Breaking the Tradeoff: Materials Innovations That Balance Energy Density, Performance, Safety, and Cost

Steven R. Aubuchon, PhD, Business Development Director, Battery Systems, WL Gore & Associates Inc.

Battery engineers are challenged to simultaneously improve energy density, performance, safety, and cost. This presentation examines how advanced materials can help overcome these competing requirements through improved thermal propagation resistance and optimized battery venting. Topics include compression-tuned thermal barriers that maintain protection under mechanical load and venting technologies that combine pressure

equalization, rapid gas evacuation, and moisture management. Case studies will demonstrate how these approaches support safer, higher-performing battery systems.

2:50 Bridging Generative AI with Physics-Based Modeling for Accelerated Battery Manufacturing Optimization
Alejandro Franco, PhD, Professor, Université de Picardie Jules Verne
Standard generative AI methods face critical limitations in electrode design, often producing "hallucinations" due to a lack of physical constraints. We address this gap by coupling 3D-resolved generative models with physics-based simulations to ensure physically viable wet-processed electrode designs. Interfacing this approach with our pre-existing ARTISTIC modeling framework lays the foundation to also tackle dry processing and recycled materials. This synergy is designed to accelerate manufacturing optimization and pilot-line scale-up.

3:20 Recharge Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

PLENARY KEYNOTE

3:50 Shep Wolsky Battery Innovator of the Year Award Presentation and Chairperson's Remarks
Craig Wohlers, General Manager, Cambridge EnerTech



3:55 Metal Contamination in Dry Electrode Lithium-ion Batteries
Troy Hayes, PhD, Director of Quality, Tesla
Metallic contamination in lithium-ion battery cathodes can cause field failures via internal short circuits. While magnets effectively remove metal particles in wet electrode processing, their efficiency drops significantly in dry processing. Dry methods also increase equipment wear, raising contamination risks. This talk examines how such contamination leads to microshorts, the behavior of microshorts with cycling, and methods to reliably manage metal contaminants in dry manufacturing environments.



4:25 New Science Frontiers in Battery Technologies
Shirley Meng, PhD, The Liew Family Professor, Pritzker School of Molecular Engineering, The University of Chicago; Vice President of Industry, Nanyang Technological University
In this talk, I will discuss a few new perspectives for energy storage materials including new solvation architecture designs for liquid electrolytes and new superionic conductors in soft or hard materials. With recent advances in photon and electron characterization tools and computational methods, we can explore ionic mobility, charge transfer, and ion matter interactions in electrochemical system *in operando*.



4:55 Energy Solution Technologies for the AI Era: Expanding the Value of Advanced Battery Systems
Masato Fujikawa, Director, Energy R&D Center, Panasonic Energy Co., Ltd.
The rapid growth of artificial intelligence is accelerating demand for reliable and sustainable energy infrastructure. Advanced battery technologies are evolving beyond traditional energy storage to become a critical foundation for data centers, mobility, renewable energy integration, and resilient power systems. This presentation explores key technology trends shaping the future of rechargeable batteries, including cell innovation, system integration, safety enhancement, and resource circularity.

5:25 Connect & Engage Reception in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

6:30 Close of Day

WEDNESDAY, MARCH 17

7:30 am Registration Open and Morning Coffee

ADVANCES IN CELL MANUFACTURING AND SUPPLY-CHAIN MANAGEMENT

7:55 Chairperson's Remarks
Alejandro Franco, PhD, Professor, Université de Picardie Jules Verne

8:00 Presentation to be Announced TENPOWER

8:30 Life-Cycle Analysis of Stage-Resolved Resource Utilization Efficiency of Four Critical Minerals in Lithium-ion Battery Supply Chains with the GREET Model
Michael Wang, PhD, Group Center Director & Distinguished Fellow, Systems Assessment Center, Argonne National Laboratory
Lithium-ion battery deployment is increasing demand for lithium, nickel, cobalt, and graphite. We expanded Argonne's R&D GREET model to quantify stage-resolved and life-cycle resource utilization efficiency (RUE) across eleven commercial technology routes. Life-cycle RUE ranges from 26%–72% for lithium, approximately 65% for cobalt, 60%–86% for nickel, and 35% and 71% for natural and synthetic graphite, respectively, identifying opportunities to improve resource efficiency.

9:00 Impacts of AI on the Battery Industry—How Can AI Revolutionize Battery Development and Industrialization?
Simon Buderath, Strategy & Technology Consulting, P3 USA
AI is transforming our daily work and the battery industry is no exception. In R&D, it can predict new materials and combinations and can also optimize cell and battery designs. In production, it can drive efficiency through predictive maintenance and real-time control. Vertical integration will be key to success, providing end-to-end data access and ownership.

9:30 IonPort Fiber-Based Separators: The Ideal Solution for LFP & Sodium-ion Energy Storage Systems delfort
Alexander Onz, Technical Program Manager IonPort, Sales, delfort

9:45 Presentation to be Announced inventus

10:15 Coffee Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

11:05 FEATURED PANEL DISCUSSION: Scaling Dry-Processed Electrode Architecture from the Lab to the Gigafactory
Moderator: Shirley Meng, PhD, The Liew Family Professor, Pritzker School of Molecular Engineering, The University of Chicago; Vice President of Industry, Nanyang Technological University
This panel explores how binder–carbon interactions enable thicker, higher-voltage, more stable electrodes, and what it will take to scale dry processing in high-volume production. This international panel of experts will discuss the advances in process control, quality, qualification and cost control that enable implementation.

12:05 pm Advanced Industrial Gas & Chemical Vapor Modification Techniques for Next-Generation Materials Airgas an Air Liquide company
Jamie Greer, Scientific Researcher, Air Liquide

To meet energy storage demands, precise manufacturing control is essential for next-gen batteries. We present two innovations: optimized high-temperature calcination and surface engineering via atomic layer deposition (ALD). Calcining NMC cathodes in controlled oxygen atmospheres boosts cyclability by over 10% after 100 cycles. Novel precursors enable ultrathin protective coatings, mitigating degradation and enhancing cell lifespan, calendar life, and safety for Li-ion and solid-state batteries.

12:35 Networking Luncheon *(Sponsorship Opportunity Available)*

1:20 Dessert Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

1:50 Close of Conference

MANUFACTURING STREAM

Global Battery Manufacturing Production

Maximizing Production Efficiency & Quality to Deliver on Global Demand

WEDNESDAY, MARCH 17

12:35 pm Registration Open

12:35 Networking Luncheon *(Sponsorship Opportunity Available)*

1:20 Dessert Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

SCALING GLOBAL BATTERY PRODUCTION

1:50 Chairperson's Remarks
Shunsuke Amagai, Founder & Co-CEO, Beff



1:55 FEATURED PRESENTATION: LG Energy Solution - Perspective on the Current Battery Landscape
Tim DeBastos, Managing Director, North American Battery Development, LG Energy Solution
This presentation will share LG Energy Solution's perspective on the battery landscape with an emphasis on North America and will discuss the overall electrification trends along with automotive, ESS, and IT Mobility products.

2:25 From Concept to Commercialization: Bridging the Domestic Battery Gap
Ted Miller, Senior Principal Advisor, Pacific Northwest National Laboratory
To facilitate energy storage demand in the US, automakers including Ford and GM have committed to leveraging Li-ion battery production resources to build stationary energy storage technology to support domestic AI data center buildout. This talk will consider those challenges and the path forward to bridging the gap.

2:55 Presentation to be Announced

3:25 Recharge Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

3:55 Expected Global Scale and Costs of Large-Scale Battery Making
Celina Mikolajczak, Advisor to the Battery Industry
The global scale of battery manufacturing is estimated to be approximately 20TWh of annual production to meet electrification targets, requiring trillions of dollars of investment (approximately $500M/GWh for the full production ecosystem). This talk will discuss the basis of these estimates, some reasonable installed production capacity targets, the optimum size ranges for a factory, why ramp-up rate really matters, and where some cost savings opportunities can be found.

4:25 Train Faster and Ramp Faster—How VR Unlocks Next-Gen Workforce Development
Hailong Ning, PhD, Co-Founder & CEO, VTA Technology
As battery demand surges, the industry faces a workforce skills gap that traditional training cannot fill. This talk examines the transformative role of Virtual Reality (VR) in bridging this divide. We will discuss how immersive simulation tackles the unique challenges of battery manufacturing. Learn how leading manufacturers are leveraging VR to accelerate onboarding, reduce material waste, and standardize best practices across global facilities.

4:55 Cathode Active Materials: The Strategic Core of Performance, Cost, and Sustainability
Tom Van Bellinghen, Founder, Lithink
Cathode active materials (CAM) occupy a pivotal position in lithium-ion battery systems, as they are the single most influential component across all three core design criteria: performance, cost, and CO_2 footprint. Understanding cathode materials—both from a technical and a supply-chain perspective—is therefore essential for anyone working to advance next-generation battery technologies or scale-up sustainable energy storage solutions.

5:25 Close of Day

THURSDAY, MARCH 18

7:00 am Registration Open and Morning Coffee

INTERACTIVE LEADERSHIP BREAKFAST

7:25 Powering Impact: An Interactive Session on Technology, Market Strategy, and Execution in the Battery Economy



Moderator: Christina Lampe-Önnerud, PhD, Founder and CEO, Cadenza Innovation
The session will center on three practical dimensions: how to position technical concepts in terms of customer value and cost-performance; how to communicate with credibility to executives, investors, and commercial partners; and how project leadership translates vision into milestones that matter.

SCALING GLOBAL BATTERY PRODUCTION

8:25 Chairperson's Remarks
Tom Van Bellinghen, Founder, Lithink

8:30 Mass Production Processes for Solid-Liquid Hybrid and All Solid-State Batteries in China: From the "Laboratory" to the "Production Line"
Mark Lu, PhD, Senior Industrial Analyst, Industrial Economics & Knowledge Center, Industrial Technology Research Institute
China is moving solid-liquid hybrid and all-solid-state batteries from laboratory development toward pilot and mass production. This presentation reviews the manufacturing pathways, process integration, equipment requirements, and scale-up challenges behind this transition. It compares emerging approaches in cell assembly, electrolyte handling, quality control, and yield improvement, while assessing China's manufacturing readiness and the key technical and economic barriers that must be overcome for large-scale commercialization.

9:00 From R&D to Mass Production: Expert-Driven Battery Development and Yield Optimization with Beff Navigator Platform
Shunsuke Amagai, Founder & Co-CEO, Beff
This presentation will introduce how Beff combines its digital platform with hands-on engineering expertise to support material and cell manufacturers throughout the entire development and production lifecycle.

9:00 Battery Booth Crawl with Bagels in the Exhibit Hall with Last Chance for Poster Viewing

9:30 Sponsored Presentation *(Opportunity Available)*

10:00 Battery Booth Crawl Continues in the Exhibit Hall with Last Chance for Poster Viewing

10:45 PANEL DISCUSSION: The Role of Technical Qualification as a Key Enabler in the Battery Industry Ecosystem from Academia to Industry

Moderator: Mohamed Elkadragy, PhD, Program Manager—Battery & H2 Fuel Cell, Daimler Truck

As battery manufacturing scales globally, technical qualification has become the critical bridge between laboratory innovation and commercial production. This panel brings together voices from academia, cell makers, OEMs, and suppliers to examine how rigorous qualification of materials, processes, equipment, and people accelerates technology transfer, de-risks scale-up, and builds supply chain confidence. Panelists will share practical frameworks, lessons learned, and collaborative models that shorten time-to-market while ensuring safety, quality, and reliability.

11:45 Presentation to be Announced

12:00 pm Sponsored Presentation *(Opportunity Available)*

12:15 Enjoy Lunch on Your Own

AI APPLICATIONS IN BATTERY MANUFACTURING

1:10 Chairperson's Remarks

Brian Barnett, PhD, CTO, Nyobolt

1:15 What Can We Learn from the Data a Battery Factory Already Generates?

Lawrence Pan, PhD, Co-Founder, Battery AI

Battery factories generate enormous quantities of process, equipment, formation, and test data, much of which is used only for immediate production decisions or traceability. Connecting data across manufacturing steps and applying data-driven analysis can enable prediction of downstream cell performance while revealing previously hidden sources of process and equipment variation. This presentation explores how routinely collected factory data can be transformed into actionable manufacturing insight.

SUPPLY CHAIN INNOVATION

1:45 BATT Coalition Ongoing Federal Policy Advocacy Initiatives to Support a Robust Domestic Battery and Materials Manufacturing Supply Chain

David Howell, Vice President, Strategic Marketing Innovations (SMI)

The Battery Advocacy for Technology and Transformation (BATT) Coalition works to grow the domestic manufacturing supply chain for lithium-based battery materials, components, and military cell production. BATT works with Congress and federal agencies to implement a legislative and agency strategy that supports innovation and market and trade incentives to grow this critical industry. This presentation updates the federal policy landscape, administration actions, and congressional initiatives that support coalition objectives.

2:15 The University Prototyping Lab—A Critical Link in the Global Battery Supply Chain

Greg Less, Director, University of Michigan Battery Lab

Materials development, cell prototyping, and data acquisition are all time-, space-, and most importantly, capital-intensive endeavors. The use of a shared resource, such as the University of Michigan Battery Lab, can reduce this upfront burden for companies across the battery supply-value chain by giving immediate access to in-place capital resources and trained operators, bridging the "Valley of Death" between a novel idea and large-scale production faster and at lower cost.

WORKFORCE DEVELOPMENT

2:45 Battery Talent Census, Trends, and Insights

Matt Anders, Founder & Lead Recruiter, VoltForce

Taking a deep dive into the Battery Talent Census data, battery trends looking towards 2027, and valuable insights for those looking to advance their careers or hire more efficiently.

3:15 Transition to Closing Plenary

CLOSING PLENARY PANEL DISCUSSION

3:30 Navigating the Global Battery Growth in Harmony with Shifting US Policy, Demanding Energy Security, and Big-Data Requirements



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

In this plenary closing discussion, we are ending the conference with a thought-provoking and insightful panel of experts led by Christina Lampe-Önnerud to help us think through: where is the US battery market going in the aftermath of the Big Beautiful Bill and how is this different in Europe and Asia? How do we as an industry navigate these uncertain times?

4:30 Close of Conference

MONDAY, MARCH 15

7:00 am Registration and Morning Coffee

5:00 pm Close of Day

TUESDAY, MARCH 16

7:00 am Registration Open and Morning Coffee

8:05 Organizer's Remarks

THERMAL RUNAWAY, MECHANISMS, AND MITIGATION

8:10 Chairperson's Remarks
Judy Jeevarajan, PhD, Vice President and Executive Director, Electrochemical Safety Research Institute, UL Research Institutes

8:15 A Unified Machine-Learning Framework for Predicting Energy Yield and Classifying Failure Modes in Battery Thermal Runaway
Simran Kumari, PhD, Senior Research Scientist, Materials Informatics, Nissan
A data-driven framework is introduced for predicting the energy yield and classifying the trigger mechanism of thermal runaway in lithium-ion batteries. The core of this approach is a 2D uniform data augmentation method that corrects for severe data imbalances across multiple feature dimensions simultaneously. A stacked ensemble regressor trained on this balanced data demonstrates high predictive accuracy across all failure modes, providing a valuable tool for designing safer battery systems.

8:45 Thermal Runaway Mitigation via Emergency Discharge: Regime Diagram and Competing Role of External Heating
Peng Zhao, PhD, Associate Professor, Mechanical and Aerospace Engineering, University of Tennessee Knoxville
Emergency discharge has been considered as an effective strategy to mitigate thermal runaway by reducing the state of charge (SOC), whereas substantial ambiguities remain due to the wide range of discharge rates beyond normal operation, complex coupling with electrochemistry, and competing effects from external heating. This talk focuses on recent experimental investigations of thermal runaway mitigation in a wide range of discharge and heating conditions.

9:15 Achieving a 10-Fold TR Risk Reduction Due to Cell Defects with Metallized Polymer Current Collectors
Eric Darcy, PhD, Former Battery Technical Discipline Lead, NASA-JSC; Private Consultant, Darcy Batt Consulting, LLC
Cell defects can trigger thermal runaway (TR), presenting significant safety risks for lithium-ion batteries. This presentation examines how metallized polymer current collectors can reduce these risks by limiting the energy released during internal short circuits. It will explore the mechanisms behind the reported tenfold reduction in thermal runaway risk and discuss the implications for battery safety, cell design, and safer large-scale energy storage systems.

9:45 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

ADVANCED DIAGNOSTICS, MODELING, AND OPERATIONAL SAFETY

10:30 A Spatially Resolved Single-Particle Model for High C-Rate Lithium-ion Battery Applications
Gregory L. Plett, PhD, Professor, Electrical & Computer Engineering, University of Colorado, Colorado Springs
This talk presents a spatially resolved single-particle model that captures variations in solid stoichiometry, reaction current, and overpotential across electrode thickness while retaining low complexity. This formulation adds only two additional states per electrode. Simulation results show that our "SPMe+" reduces voltage prediction error by 65 to 90% (depending on profile) compared with a conventional SPMe, making it a valuable contribution to next-generation battery controls.

11:00 Enhancing Operational Safety of Lithium-ion Batteries in Heavy-Duty Applications through Reference Electrode Measurements
Dragoljub Vrankovic, PhD, Manager, Team Cell Technology, Daimler Truck
Battery electric trucks place significant demands on battery safety and durability. This presentation explores how integrated cell sensors provide insights into internal electrochemical and mechanical processes. Reference electrodes monitor anode potential to identify lithium plating risks, while swelling sensors measure irreversible cell expansion. Together, these measurements support more precise operating limits and inform safer charging strategies for lithium-ion batteries in heavy-duty applications.

11:30 From Telemetry to Root Cause: Explainable Diagnostic and Risk Forecasting Frameworks for Real-World EV Fleet Batteries
Tom Maull, Chief Deployment Strategist, Heavy Industry, Motorsport, and Advanced Engineering, Elysia Battery Intelligence
As electric vehicle fleets and heavy-industrial battery deployments expand, reliability, warranty, and safety management require systematic, explainable root-cause diagnosis beyond anomaly detection. This presentation demonstrates an evidence-led framework evaluating sensor coverage, signal persistence, and competing explanations to produce traceable diagnostic outputs. By linking inferred physical states to targeted mitigation strategies, the approach helps operators and OEMs prioritize high-risk assets, prevent field failures, and optimize warranty and second-life decisions.

12:00 pm Presentation to be Announced

12:15 Sponsored Presentation *(Opportunity Available)*

12:30 Networking Luncheon *sponsored by* **EVE Energy Co.**

1:15 Dessert Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

NEXT-GENERATION BATTERY CHEMISTRIES: SAFETY AND PERFORMANCE

1:45 Chairperson's Remarks
Eric Darcy, PhD, Former Battery Technical Discipline Lead, NASA-JSC; Private Consultant, Darcy Batt Consulting, LLC

1:50 The Comparative Safety of Next-Generation Batteries
Donal Finegan, PhD, Staff Scientist Batteries, Electrified Transport, National Renewable Energy Laboratory
With the breadth of applications for batteries expanding to demanding sectors like electric aviation, data centers, and behind the meter storage, alternative chemistries to conventional Li-ion cells are being adopted. These include alkali metal anodes, solid-state electrolytes, sodium-ion, potassium-ion, and more. The safety of next-generation chemistries is still not well understood. This talk will cover a comprehensive safety evaluation and comparative safety of next-generation chemistries.

2:20 Towards Criteria-Based Safety Assessment of High-Energy Batteries: Comparison of Li-ion to Na-ion
Gordon H. Waller, PhD, Materials Engineer, U.S. Naval Research Laboratory

Evaluating the relative safety of new battery chemistries can be a challenge, particularly when TRL is at the laboratory scale. Ideally, battery safety should be evaluated using a variety of quantitative methodologies. This presentation will compare the safety performance of commercially available lithium-ion and sodium-ion cells using multiple methodologies with the goal of providing a framework for "criteria-based" safety assessments that consider multiple facets of battery safety.

2:50 Characterization of Safety of Commercial and Custom-Designed Sodium-ion Cells
Judy Jeevarajan, PhD, Vice President and Executive Director, Electrochemical Safety Research Institute, UL Research Institutes
Sodium-ion cells have entered the commercial market but there is not much data available in the literature, on either the performance or safety of cells and batteries of this chemistry. At UL Research Institutes, commercial and custom-designed sodium-ion cells were tested for performance and safety. Tests were carried out on single cells, as well as 12V and 48V modules.

3:20 Recharge Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

PLENARY KEYNOTE

3:50 Shep Wolsky Battery Innovator of the Year Award Presentation and Chairperson's Remarks
Craig Wohlers, General Manager, Cambridge EnerTech



3:55 Metal Contamination in Dry Electrode Lithium-ion Batteries
Troy Hayes, PhD, Director of Quality, Tesla
Metallic contamination in lithium-ion battery cathodes can cause field failures via internal short circuits. While magnets effectively remove metal particles in wet electrode processing, their efficiency drops significantly in dry processing. Dry methods also increase equipment wear, raising contamination risks. This talk examines how such contamination leads to microshorts, the behavior of microshorts with cycling, and methods to reliably manage metal contaminants in dry manufacturing environments.



4:25 New Science Frontiers in Battery Technologies
Shirley Meng, PhD, The Liew Family Professor, Pritzker School of Molecular Engineering, The University of Chicago; Vice President of Industry, Nanyang Technological University
In this talk, I will discuss a few new perspectives for energy storage materials including new solvation architecture designs for liquid electrolytes and new superionic conductors in soft or hard materials. With recent advances in photon and electron characterization tools and computational methods, we can explore ionic mobility, charge transfer, and ion matter interactions in electrochemical system *in operando*.



4:55 Energy Solution Technologies for the AI Era: Expanding the Value of Advanced Battery Systems
Masato Fujikawa, Director, Energy R&D Center, Panasonic Energy Co., Ltd.
The rapid growth of artificial intelligence is accelerating demand for reliable and sustainable energy infrastructure. Advanced battery technologies are evolving beyond traditional energy storage to become a critical foundation for data centers, mobility, renewable energy integration, and resilient power systems. This presentation explores key technology trends shaping the future of rechargeable batteries, including cell innovation, system integration, safety enhancement, and resource circularity.

5:25 Connect & Engage Reception in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

6:30 Close of Day

WEDNESDAY, MARCH 17

7:30 am Registration Open and Morning Coffee

NEXT-GENERATION BATTERY CHEMISTRIES: SAFETY AND PERFORMANCE (CONT.)

7:55 Chairperson's Remarks
Peng Zhao, PhD, Associate Professor, Mechanical and Aerospace Engineering, University of Tennessee Knoxville

8:00 Sponsored Presentation *(Opportunity Available)*

8:30 Thermochemical Safety Evaluation of Sodium-ion Battery Chemistries
Nathan Johnson, PhD, Senior Member of Technical Staff, Sandia National Laboratories
As sodium-ion batteries gain attention as an alternative to lithium-ion technology, understanding their thermal safety characteristics is essential for reliable deployment. This presentation examines the thermochemical behavior of sodium-ion battery chemistries, including heat generation, thermal stability, and potential failure mechanisms. The findings will help inform safety assessment, cell design, and risk mitigation strategies for sodium-ion batteries in energy storage and other applications.

9:00 Thermal and Gas Behavior of Potassium-ion Batteries
Hadi Khani, PhD, Research Assistant Professor, Walker Mechanical Engineering, University of Texas at Austin
This presentation examines heat release and gas evolution in potassium-ion batteries using graphite anodes, Prussian white cathodes, and a low-flammability phosphate electrolyte. Results identify anode reactions below 100 °C and toxic gas generation from charged cathodes during heating. The findings show why low flammability alone cannot establish battery safety and provide a basis for improving materials screening, identifying gases to monitor, and designing thermal tests for this emerging chemistry.

9:30 Presentation to be Announced

GAMMA TECHNOLOGIES

9:45 Sponsored Presentation *(Opportunity Available)*

10:15 Coffee Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

SYSTEMS ENGINEERING: SAFETY MANAGEMENT AND COMPLIANCE

11:05 Engineering Battery Safety beyond Hardware: A Systems Approach to Risk Reduction
Bin Li, Staff System Safety Engineer, RESS & Thermal, General Motors Co.
Battery safety is often viewed as a chemistry, cell, or hardware challenge, yet many safety issues stem from system-level factors such as requirements, interfaces, diagnostics, validation gaps, and overlooked use cases. Effective safety requires a systems engineering approach across the product lifecycle, combining prevention, mitigation, validation, and fleet learning. Hardware is essential, but battery safety is ultimately achieved through integrated risk management across the battery, vehicle, and external factors.

11:35 From Classification to End of Life: Where Battery Compliance Programs Actually Break

Ryan Paquet, President, HazMat Safety Consulting

Battery compliance programs usually pass discipline by discipline—classification, transport, storage, response, retirement—and still fail at the seams between them. This session walks the six points in a battery's handling life where compliant programs typically break, from classification through end of life, layering in how condition (new, in-service, damaged, or retired) changes the answer at each one. The goal is diagnostic: where does your program actually break?

12:05 pm Sponsored Presentation *(Opportunity Available)*

12:35 Networking Luncheon *(Sponsorship Opportunity Available)*

1:20 Dessert Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

1:50 Close of Conference Track

Advances in Automotive Battery Applications

Optimizing Battery Systems for Next-Generation Electric Vehicles

MONDAY, MARCH 15

7:00 am Registration and Morning Coffee

5:00 pm Close of Day

TUESDAY, MARCH 16

7:00 am Registration Open and Morning Coffee

8:05 Organizer's Remarks
Craig Wohlers, General Manager, Cambridge EnerTech

OEM APPLICATION-DRIVEN DEVELOPMENT

8:10 Chairperson's Remarks
Rohan Gokhale, PhD, Applied Technology Manager, Umicore Rechargeable Battery Materials

8:15 Industrial Experience with Europe's First LFP Pouch Cell in a Cell-to-Pack Architecture
Mohamed Taggougui, Expert Leader, Battery Cell, Ampere, part of the Renault Group
This presentation shares Renault's experience launching Europe's first locally manufactured automotive LFP pouch cell integrated into a Cell-to-Pack architecture. It reviews key technical challenges, durability performance, abuse tolerance, and system-level integration on the Renault 5 platform. The talk highlights how LFP enables more affordable EVs while meeting stringent safety and quality requirements, and provides an outlook on Renault's next-generation cobalt-free high-energy battery chemistries.

8:45 USABC: Advancing Automotive Battery Technologies
Meng Jiang, PhD, Staff Researcher, R&D, General Motors Company
USABC unites automakers, government, national laboratories, and technology developers to advance pre-competitive battery technologies. This presentation highlights how USABC sets targets, selects projects, and validates performance, with examples in fast-charging lithium-ion cells, silicon and lithium-metal anodes, advanced cathodes, solid-state batteries, manufacturing, and recycling. The portfolio addresses cost, performance, safety, manufacturability, supply chain resilience, and sustainability.

9:15 Solid-State Battery Commercialization: Status and Challenges
Alvaro Masias, Supervisor, Cell Technology Research, Ford Motor Company
Solid state batteries garner a large amount of attention as the future of next-generation battery chemistries and as a result it can be difficult to separate hype from reality in this important technology. This talk will discuss the status of solid state battery commercialization, important challenges remaining, and technology needs from an automotive OEM perspective.

9:45 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*



10:30 FEATURED PRESENTATION: Evaluating Sodium-ion Batteries for Light-Duty Vehicles
Oliver Gross, MASc, Senior Fellow, Electrified Energy Technology, Stellantis
The emergence of sodium-ion battery technology has sparked considerable interest as the automotive industry seeks cost-effective and sustainable energy storage solutions. This presentation assesses the suitability of sodium-ion batteries for automotive and light-duty vehicle applications by examining their performance characteristics, economic drivers, technology limitations, and commercialization challenges. Potential application spaces and pathways to market adoption are discussed, together with the factors that may enable or constrain broader deployment.



11:00 FEATURED PRESENTATION: On Research Needs and Advancements for beyond Li-ion Batteries
Rana Mohtadi, PhD, Senior Principal Scientist, Materials Research, Toyota Research Institute of North America
Beyond Li-ion batteries are increasingly needed to meet the rising energy-density demands of emerging applications such as long-range electric transportation, large-scale grid storage, and other technologies where the limits of current Li-ion chemistries are becoming more apparent. Herein, we will discuss technological bottlenecks for enabling metal anode batteries from a fundamental perspective, offer proposals to address these, and highlight advancements achieved in our laboratories.

11:30 Insights into Gas Generation in Battery Cells during Thermal Abuse
Vamakshi Yadav, Researcher, General Motors
Gas detection during thermal runaway in lithium-ion batteries offers a promising method for early detection and safety assessment. Although heat-generating reactions have been extensively studied using techniques like accelerating rate calorimetry (ARC) and differential scanning calorimetry (DSC), correlating these reactions with gas emissions remains challenging. This talk will focus on real-time analysis of gas species generated within battery cells leading up to thermal runaway.

12:00 pm Sponsored Presentation *(Opportunity Available)*

12:30 Networking Luncheon *sponsored by* **EVE Energy Co.**

1:15 Dessert Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

ADVANCED BATTERY R&D FOR AUTOMOTIVE APPLICATIONS

1:45 Chairperson's Remarks
Mohamed Taggougui, Expert Leader, Battery Cell, Ampere, part of the Renault Group



1:50 FEATURED PRESENTATION: CATL's 21st-Century Lab: The Current State of Research on Interfacial Engineering
Samantha Hung, PhD, Senior Engineer, CATL
The 21C Lab at CATL focuses on bridging fundamental material science research with commercial cell development. This presentation will offer new perspectives on understanding electrode-electrolyte interphases. Rather than focusing solely on performance metrics, we utilize advanced characterization techniques to investigate the interfacial differences, leveraging these fundamental insights to guide the design of more stable next-generation cells.

2:20 Design-to-Cost Mn-Rich Cathode Active Materials for Mass-Market EVs
Rohan Gokhale, PhD, Applied Technology Manager, Umicore Rechargeable Battery Materials
This presentation will provide an overview of the development of sustainable layered Mn-rich cathodes (HLM) materials for the high-performance and low-cost segment of the electric vehicle market.

Advances in Automotive Battery Applications

Optimizing Battery Systems for Next-Generation Electric Vehicles

2:50 How Agentic AI Is Changing Battery Modeling Workflows
Javier Gazzarri, PhD, Consulting Application Engineer, Application Engineering, MathWorks
This talk shows how engineers make use of AI agents in conjunction with established and trusted software tools to accelerate the development of battery systems. After an introduction to using agents in the MathWorks ecosystem, we show examples of creation and modification of complex battery models. We finish with best practices for prompt writing that mitigate the non-deterministic nature of the AI responses and minimize token usage.

3:20 Recharge Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

PLENARY KEYNOTE

3:50 Shep Wolsky Battery Innovator of the Year Award Presentation and Chairperson's Remarks
Craig Wohlers, General Manager, Cambridge EnerTech



3:55 Metal Contamination in Dry Electrode Lithium-ion Batteries
Troy Hayes, PhD, Director of Quality, Tesla
Metallic contamination in lithium-ion battery cathodes can cause field failures via internal short circuits. While magnets effectively remove metal particles in wet electrode processing, their efficiency drops significantly in dry processing. Dry methods also increase equipment wear, raising contamination risks. This talk examines how such contamination leads to microshorts, the behavior of microshorts with cycling, and methods to reliably manage metal contaminants in dry manufacturing environments.



4:25 New Science Frontiers in Battery Technologies
Shirley Meng, PhD, The Liew Family Professor, Pritzker School of Molecular Engineering, The University of Chicago; Vice President of Industry, Nanyang Technological University
In this talk, I will discuss a few new perspectives for energy storage materials including new solvation architecture designs for liquid electrolytes and new superionic conductors in soft or hard materials. With recent advances in photon and electron characterization tools and computational methods, we can explore ionic mobility, charge transfer, and ion matter interactions in electrochemical system *in operando*.



4:55 Energy Solution Technologies for the AI Era: Expanding the Value of Advanced Battery Systems
Masato Fujikawa, Director, Energy R&D Center, Panasonic Energy Co., Ltd.
The rapid growth of artificial intelligence is accelerating demand for reliable and sustainable energy infrastructure. Advanced battery technologies are evolving beyond traditional energy storage to become a critical foundation for data centers, mobility, renewable energy integration, and resilient power systems. This presentation explores key technology trends shaping the future of rechargeable batteries, including cell innovation, system integration, safety enhancement, and resource circularity.

5:25 Connect & Engage Reception in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

6:30 Close of Day

WEDNESDAY, MARCH 17

7:30 am Registration Open and Morning Coffee

ADVANCED BATTERY R&D FOR AUTOMOTIVE APPLICATIONS

7:55 Chairperson's Remarks
Javier Gazzarri, PhD, Consulting Application Engineer, Application Engineering, MathWorks

8:00 Sponsored Presentation *(Opportunity Available)*

8:30 The Autonomous Era Has a Battery Problem
Moshiel Biton, PhD, CEO, Addionics
Autonomous mobility changes the economics of the battery. Today's batteries were built around human driving patterns, with rest between trips. Autonomous fleets cannot afford that downtime, as it undermines fleet economics. This talk explores the demands of 24/7 operation, battery limitations, and the technologies needed to enable the next generation of mobility, from autonomous EVs and electric trucks to physical AI and space.

9:00 Performance and Life Computational Tools for Next-Gen Cell Chemistries
Kevin L. Gering, PhD, Distinguished Staff Scientist, Energy Storage Technologies, Idaho National Laboratory
A multi-tool physics-based architecture is demonstrated that performs evaluations of battery performance and degradation, with emphasis on aging path dependence. This allows accelerated characterization of new battery chemistries and matching to different application categories. Optimization of aging path is facilitated by our methods, looking at state of health metrics capacity, conductance and power. Case studies will feature lithium-ion, sodium-ion, and silicon-based cell chemistries. Multi-use batteries is one theme.

9:30 Sponsored Presentation *(Opportunity Available)*

10:15 Coffee Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

11:05 Computational Fluid Dynamics (CFD)–Based Thermal Performance Simulation of Intumescent Coatings for EV Battery Fire Protection
Xiaohai Jiang, PhD, Process Modeling Engineer, Coatings Innovation Center, PPG Industries Inc.
This presentation describes a full transient CFD methodology for predicting the thermal performance of intumescent coatings under EV battery thermal runaway-like heating conditions. The model incorporates conjugate heat transfer, radiative heat exchange, and coating expansion effects through an equivalent thermal conductivity approach.

REGULATORY OVERVIEW

11:35 Revised UN Model Regulations on the Transportation of Dangerous Goods—Batteries
Marcus Boolish, Policy Advisor, Wiley Rein LLP, PRBA Rechargeable Battery Association
The revised battery portions of the United Nations *Recommendations on the Transport of Dangerous Goods—Model Regulations* and *Manual of Tests and Criteria* will publish in early 2027 and become effective January 1, 2029. Changes to both documents and implications on transportation in all modes for batteries and battery-containing devices will be reviewed.

12:05 pm Sponsored Presentation *(Opportunity Available)*

12:35 Networking Luncheon *(Sponsorship Opportunity Available)*

1:20 Dessert Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

1:50 Close of Conference Track

WEDNESDAY, MARCH 17

12:35 pm Registration Open

12:35 Networking Luncheon *(Sponsorship Opportunity Available)*

1:20 Dessert Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

BESS MARKET EVOLUTION, EMERGING TECHNOLOGIES, AND GRID APPLICATIONS

1:50 Chairperson's Remarks
Sam Jaffe, Vice President, Business Development and Product, Mana Battery

1:55 The BESS Market Reality Check: Costs, Demand, and the Technologies Reshaping Grid Storage
Evan Hartley, Research Manager, Benchmark Mineral Intelligence
The grid-scale battery energy storage market is evolving rapidly as project costs, deployment demand, and technology options reshape investment and system design decisions. This presentation examines current market realities, including cost drivers, emerging demand patterns, and the technologies influencing the next generation of BESS deployments. It will explore how evolving battery chemistries, system architectures, and performance requirements are shaping project economics, operational priorities, and long-term grid storage strategies.

2:25 Battery Storage for Data Centers: Technology, Opportunities, and Market Outlook
Conor O'Brien, PhD, Principal Technology Analyst, Analyst Team, IDTechEx
The rapid growth of AI data centers is increasing demand for onsite BESS and UPS battery solutions to cover critical loads and improve power reliability. This presentation will compare current and emerging battery technologies including Li-ion, VRLA, Na-ion, and flow batteries across key performance metrics for data center applications. It will also discuss the current market trend, key projects, leading players, and a 10-year demand outlook.

3:25 Recharge Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

3:55 Commercializing Organic Flow Batteries for the Grid and AI Applications
Meisam Bahari, PhD, CTO, Quino Energy
AI's surging electricity demand calls for batteries that can scale accordingly. Quino Energy's nonflammable flow batteries use abundant raw materials, require no critical materials, and support a domestic supply chain. With pilot projects supporting AI data centers already underway, Quino is advancing commercialization through scalable manufacturing, delivering affordable energy storage for AI applications, enabling greater renewable energy adoption, and strengthening grid resilience as demand for reliable power grows.

4:25 Beyond the Cell: Building BESS for the Future of the Grid
Sanjiv Malhotra, PhD, Founder & President & CEO, Sparkz Inc.
As grid-scale energy storage becomes increasingly critical to grid reliability and resilience, building a domestic battery supply chain is essential. This presentation explores the development of lithium iron phosphate (LFP) battery energy storage systems, from abundant raw materials and cell manufacturing through complete system integration. It will examine the role of U.S.-manufactured BESS in supporting growing electricity demand and strengthening the future grid.

4:55 Performance and Degradation of Commercial Li-ion Cells beyond 80% Capacity
Yuliya Preger, PhD, Principal Member of Technical Staff, Energy Storage Technology & Systems, Sandia National Labs
Most public Li-ion battery studies have aged cells only to 80% remaining capacity due to historical thresholds from the automotive industry. However, depending on the application requirements, batteries may still have significant value beyond this point. This presentation will cover the effect of temperature, state-of-charge range, and discharge rate on capacity retention, energy throughput, and round-trip efficiency of commercial LFP, NCA, and NMC cells in an 8+ year cycling study.

5:25 Close of Day

THURSDAY, MARCH 18

7:00 am Registration Open and Morning Coffee

INTERACTIVE LEADERSHIP BREAKFAST

7:25 Powering Impact: An Interactive Session on Technology, Market Strategy, and Execution in the Battery Economy



Moderator: Christina Lampe-Önnerud, PhD, Founder and CEO, Cadenza Innovation
The session will center on three practical dimensions: how to position technical concepts in terms of customer value and cost-performance; how to communicate with credibility to executives, investors, and commercial partners; and how project leadership translates vision into milestones that matter.

BATTERY PERFORMANCE, DIAGNOSTICS, AND SYSTEM OPTIMIZATION

8:25 Chairperson's Remarks
Meisam Bahari, PhD, CTO, Quino Energy

8:30 Application-Aware SOC and Cell Balancing for Grid-Scale LFP
Joseph O'Connor, Director, ESS Solutions, Engineering, Nuvation Energy
LFP's flat voltage curve complicates state-of-charge estimation and cell balancing, allowing hidden imbalance to reduce usable capacity. Conventional battery management systems rely on full-charge recalibration, often impractical for grid applications. This presentation compares balancing strategies for daily cycling, frequency regulation, grid-forming, and backup duty cycles, examining observability, continuous balancing, and application-specific observation windows. Attendees will learn how these choices affect usable energy, system availability, and lifetime augmentation planning.

9:00 Machine-Learned Battery Performance and Degradation Model to Enable Fast and Accurate Diagnostic and Prognostic Battery System Modeling
Paul J. Gasper, PhD, Staff Scientist, Energy Conversion & Systems Center, National Laboratory of the Rockies
Accurate battery diagnostics and prognostics rely on accurate battery performance and degradation models. While physics-based models exist, they are challenging to parameterize. Effective methods for identifying holistic battery performance and degradation models from only *ex situ* data are still needed. Here, we demonstrate an empirical OCV+ECM battery model enabled by machine-learning that accurately models battery performance and degradation through its lifetime. Developed under U.S. DOE Office of Electricity, ROVI program.

9:00 Battery Booth Crawl with Bagels in the Exhibit Hall with Last Chance for Poster Viewing

9:30 Sponsored Presentation *(Opportunity Available)*

10:00 Battery Booth Crawl Continues in the Exhibit Hall with Last Chance for Poster Viewing

10:45 EIS in Data Centers: How Advanced State-of-Health Analysis Is Driving Next-Generation Battery Backup Systems

Seran Thirugnanam, Battery Algorithms Engineer, Microsoft

In this presentation, Microsoft will discuss how electrochemical impedance spectroscopy (EIS) is enabling next-generation battery backup systems for data centers. The talk will examine the importance of state-of-health analysis, limitations of existing diagnostic approaches, and the unique value EIS offers for data center battery management systems.

11:15 Inside HIDEZ: The Fundamental Research Driving Zinc's Path to Lowest-Cost Grid Storage

Emily Dickens, CCO, Octet Scientific

Zinc-based batteries have gained serious traction in stationary storage providing high-power back-up power in critical infrastructure and long-duration energy storage to support the grid. This presentation will share the cutting-edge research of the DOE-funded HIDEZ national consortium to further zinc-based battery technologies leveraging support from industry to drive innovation.

11:45 Sponsored Presentation *(Opportunity Available)*

12:15 pm Enjoy Lunch on Your Own

BESS SAFETY, SYSTEM INTEGRATION, AND LIFECYCLE VALUE

1:10 Chairperson's Remarks

Paul J. Gasper, PhD, Staff Scientist, Energy Conversion & Systems Center, National Laboratory of the Rockies

1:15 The Value of ESS Safety: A Quantitative Valuation of Cell Safety in ESS Systems

Sam Jaffe, Vice President, Business Development and Product, Mana Battery

No battery is 100% safe, but inherently safer cells can reduce the cost and complexity of safety engineering at the system level. This presentation will examine potential cost savings in energy storage systems (ESS) by re-engineering safety architectures around safer cell designs. It will explore where savings can be achieved and highlight Mana's approach to battery safety, including test results demonstrating the performance of its safety technologies.

1:45 Enhancing Battery Safety in BESS Applications: Direction-Injection Fire Suppression in an Integrated Mitigation Strategy

Mark Ellis, Senior Vice President, Head of Battery (BESS) Technology, Volvo Energy

Thermal runaway is a defining safety concern for BESS applications. Reliably interrupting the exothermic chain reaction to mitigate low-frequency, high-severity events is a critical objective. Minimizing the likelihood of costly battery damage or lost availability from unintentional deployment is a key related performance goal. This work describes the successful design and validation of a direct-injection fire-suppression system using a novel agent that achieves both safety and performance targets.

2:15 Large-Scale Battery System Testing from Cradle to Second-Life

Steven Chung, Co-Founder & CEO, ReJoule

As battery energy storage deployments expand, comprehensive testing is essential to ensure system safety, performance, and long-term value. This presentation will explore battery testing across the lifecycle, from initial deployment and operational performance assessment to end-of-first-life evaluation and second-life applications. It will examine how advanced diagnostics and testing approaches can support more informed decisions on battery health, reuse potential, and lifetime value.

2:45 Battery Open Digital Twin to Improve Battery Project Execution and Effectiveness

George Navarro, Director, Mission Critical Solutions, Facilities Engineering Operations & Maintenance, MC Dean Inc.

Digital twins are often discussed through narrow technical definitions focused on specific components, software, or applications. However, battery digital-twin maturity spans conceptual possibilities to proven implementation. For complex, large-scale battery systems, an open, integrated digital-twin approach can bridge this gap, improving system understanding while helping avoid excessive costs, implementation delays, and project completion risks.

3:15 Transition to Closing Plenary

CLOSING PLENARY PANEL DISCUSSION

3:30 Navigating the Global Battery Growth in Harmony with Shifting US Policy, Demanding Energy Security, and Big-Data Requirements



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

In this plenary closing discussion, we are ending the conference with a thought-provoking and insightful panel of experts led by Christina Lampe-Önnerud to help us think through: where is the US battery market going in the aftermath of the Big Beautiful Bill and how is this different in Europe and Asia? How do we as an industry navigate these uncertain times?

4:30 Close of Conference

WEDNESDAY, MARCH 17

12:35 pm Registration Open

12:35 Networking Luncheon *(Sponsorship Opportunity Available)*

1:20 Dessert Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

BATTERY INNOVATION: FROM CELL DESIGN TO DEVICE PERFORMANCE

1:50 Chairperson's Remarks
Yan Yao, PhD, Professor, Earth, Environmental Engineering, and Climate, Columbia University

1:55 Impact of AI on Notebook PC Batteries
Jeremy Carlson, Battery Technology Engineer, Lenovo
This presentation explores how AI is reshaping notebook PC battery requirements, from increasing power demands and energy efficiency, to battery management and optimization. Drawing on Lenovo's perspective, it will examine the challenges and opportunities AI-enabled computing creates for battery performance, runtime, thermal management, and future notebook design.

2:25 BAIO Boost: AI-Predicted Battery Demand to Unleash PC Performance
Naoki Matsumura, Principal Engineer, Intel
Traditional power-saving modes throttle performance even when battery reserves are ample. This session introduces BAIO Boost, a deep-learning model that predicts next-day battery demand from user history, to flag at-risk days proactively. Validated against real-world usage at scale, it eliminates the battery-versus-performance compromise. Join us to explore key insights from user telemetry and the future of AI-driven power management.

2:55 Presentation to be Announced

3:10 Sponsored Presentation *(Opportunity Available)*

3:25 Recharge Break in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

3:55 Supporting OCV Drift of Si-Anode Cells in State-of-Charge and State-of-Health Indication Algorithms
Yevgen Barsukov, PhD, Head, Algorithm Development, Battery Power Systems, Texas Instruments, Inc.
State-of-charge indication relies on correlation of open circuit voltage with depth of discharge (DOD). Established chemistries have a stable OCV vs. DOD relationship over the age of the battery. However, new chemistries with higher energy density but less stable OCV are appearing. One example is Si-anode, with larger capacity, but rapid change of cells' OCV. We will discuss the TI solution for this issue and analyze its accuracy.

4:25 Physics-Based Swelling Prediction for Consumer Electronics Batteries
Thanh-Son Sam Dao, PhD, Senior Battery Modeling Engineer, Microsoft
Battery swelling is a critical reliability and product-integration challenge for high-energy-density Li-ion batteries in consumer electronics, affecting mechanical design, lifetime, and customer experience. This work develops a physics-based swelling model using PyBaMM and lab characterization data, capturing the effects of temperature, voltage window, depth of discharge, and charge/discharge rate. The goal is to connect measurements with predictive simulations supporting battery design, reliability assessment, optimization, and usage-based battery digital twins.

4:55 Battery Development for AI Glasses
Karthik Kadirvel, PhD, Director, Battery Engineering, Meta Platforms
This presentation explores innovative battery designs tailored for augmented reality glasses. We examine the unique power demands and spatial constraints of these devices, proposing solutions that enhance energy efficiency, reduce weight, and extend operational lifespan. By integrating advanced materials and smart battery management systems, our research aims to improve user experience and device performance in immersive applications, paving the way for future developments in augmented technologies.

5:25 Close of Day

THURSDAY, MARCH 18

7:00 am Registration Open and Morning Coffee

INTERACTIVE LEADERSHIP BREAKFAST

7:25 Powering Impact: An Interactive Session on Technology, Market Strategy, and Execution in the Battery Economy



Moderator: Christina Lampe-Önnerud, PhD, Founder and CEO, Cadenza Innovation
The session will center on three practical dimensions: how to position technical concepts in terms of customer value and cost-performance; how to communicate with credibility to executives, investors, and commercial partners; and how project leadership translates vision into milestones that matter.

CROSS-APPLICATION BATTERY DESIGN, SAFETY, AND RELIABILITY

8:25 Chairperson's Remarks
Jeremy Carlson, Battery Technology Engineer, Lenovo

8:30 PANEL DISCUSSION: Smaller, Faster, Smarter: Advancing Batteries for Next-Generation Consumer Electronics
Moderator: John Wozniak, PhD, President, Energy Storage and Power Consulting Inc.

9:00 Battery Booth Crawl with Bagels in the Exhibit Hall with Last Chance for Poster Viewing

9:30 Sponsored Presentation *(Opportunity Available)*

10:00 Battery Booth Crawl Continues in the Exhibit Hall with Last Chance for Poster Viewing

10:45 Can Thinner and Lighter Batteries Meet Future Regulatory Requirements?
John Wozniak, PhD, President, Energy Storage and Power Consulting Inc.
Challenges abound as the next generation of wearable devices consume more power and shrink significantly. Will health-reporting rings, watches, and other wearables be treated as medical devices or consumer electronics? European regulations require the "right to self-service" and allow consumers to replace batteries in electronics. How will device manufacturers meet these challenges?

11:15 Lithium Rechargeable Batteries for PPEs (Personal Protection Equipment)
Han Wu, PhD, Director of Technology, Swatch Group, RENATA Batteries

In this presentation, the design of batteries used in Personal Protective Equipment (PPE) is examined in relation to real-world usage patterns. By tailoring battery design to factors such as the current profile during operation, recharge behavior, and expected temperature range, designers may enhance the performance of the equipment and provide users with more reliable and comfortable experiences on the job.

11:45 FEA Modeling Applications of Medical Implant Battery Swelling and Management

Ke Chen, PhD, Principal Engineer, RDE, Integer

Integer has pioneered implantable medical device battery technology since the introduction of the WG1 lithium-iodine cell in the 1970s. Leveraging decades of battery test data, Integer developed hybrid finite element analysis (FEA) models to predict battery swelling and support enclosure design, risk assessment, and reliability evaluation. These validated models enable faster product development and provide the foundation for digital-twin tools that accelerate next-generation implantable device innovation.

12:15 pm Enjoy Lunch on Your Own

1:10 Chairperson's Remarks

John Wozniak, PhD, President, Energy Storage and Power Consulting Inc.

1:15 Batteries for Medical Devices

Hui Ye, Senior Principal Scientist, Energy & Component Center, Medtronic Inc.

Medical device applications use lithium primary and lithium-ion batteries in miniature implantable products, portable devices, and large hospital capital equipment. Delivering the highest levels of safety and reliability requires a strong understanding of use conditions and clear requirements. This abstract examines how these factors shape battery design and use and reviews test methods used to verify that requirements are met.

SOLID-STATE BATTERIES FOR CONSUMER APPLICATIONS

1:45 Low Pressure Operation of Solid-State Batteries

Yan Yao, PhD, Professor, Earth, Environmental Engineering, and Climate, Columbia University

Here we identify the unusually high susceptibility of brittle halide electrolytes to fracture as the underlying mechanism and show that stack pressure—conventionally applied to suppress mechanical damage—can instead promote it by enhancing strain transfer from the active materials to the surrounding electrolyte. Guided by this insight, we demonstrate an anode-free halide pouch cell that retains 85% of its capacity over 200 cycles at C/3 under only 2 MPa.

2:15 Launching Solid-State Batteries—Capable Batteries for Better Devices

Gregory Hitz, PhD, Founder & CTO, Ion Storage Systems

ION's customer engagement has moved conversations out of the lab and into the field. Real-world considerations—voltage profile, operating temperature window, failure modes, cleanliness, and swell—now overtake academic metrics like theoretical energy density and cycle life. Rather than "What can the battery do?", customers focus on "What device designs are now possible with ION's battery in it?"

2:45 Commercializing Solid-State Batteries for AI-Enabled Medical and Consumer Electronics

Asma Sharafi, Chief Technology Office, Ensurge MicroPower

AI-Enabled medical and consumer electronics are driving demand for smaller, safer, high-performance batteries. Advanced features such as sensing, edge processing, wireless connectivity, and real-time translation require greater energy density and design flexibility in compact devices. This presentation explores evolving battery requirements, limitations of existing solutions, and how solid-state batteries can enable next-generation products, highlighting Ensurge Micropower's technology progress and manufacturing readiness as a pathway to commercial solutions.

3:15 Transition to Closing Plenary

CLOSING PLENARY PANEL DISCUSSION

3:30 Navigating the Global Battery Growth in Harmony with Shifting US Policy, Demanding Energy Security, and Big-Data Requirements



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

In this plenary closing discussion, we are ending the conference with a thought-provoking and insightful panel of experts led by Christina Lampe-Önnerud to help us think through: where is the US battery market going in the aftermath of the Big Beautiful Bill and how is this different in Europe and Asia? How do we as an industry navigate these uncertain times?

4:30 Close of Conference

Battery Technologies for Military, Drone, and Aerospace Applications

Enabling Mission-Critical Performance through Advanced Battery Innovation

WEDNESDAY, MARCH 17

12:35 pm Registration Open

12:35 Networking Luncheon *(Sponsorship Opportunity Available)*

1:20 Dessert Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

BATTERY TECHNOLOGIES FOR EMERGING DEFENSE AND AEROSPACE APPLICATIONS

1:50 Chairperson's Remarks

Roger Brewer, Technical Fellow, Lockheed Martin Corp.

1:55 Cell and Battery Design for Electric Aviation

William Huang, PhD, Cell Engineering Manager, Archer Aviation Inc.

The needs of battery technology for electric aviation are greatly different from consumer electronics and electric ground vehicles. This talk will discuss how the lithium-ion battery cells of today can empower these technologies, and how the design and chemistry of these battery cells differ from those in other applications such as EVs. Battery pack design considerations for aerospace will also be highlighted, especially those around safety and thermal runaway management.

2:25 Powering the Next Generation of Military Armaments

Giuseppe Di Benedetto, PhD, Executive Chief Engineer for Armaments & Munitions Power, US Army DEVCOM Armaments Center

Powering military armaments demands batteries that survive extreme shock and temperatures where commercial cells fail. This strategic overview analyzes the technical gaps in legacy reserve systems and explores future technology vectors, including advanced materials and multi-modal power management. The analysis is supplemented by recent test data from in-house prototyping, highlighting progress in developing next-generation power solutions for intelligent munitions and other advanced weapon systems.

2:55 Presentation to be Announced

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3:25 Recharge Break in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

3:55 Flexible Power Sources: Failure Modes and Design Principles from the Electrode to Cell Level

Candace K. Chan, PhD, Professor, Materials Science & Engineering, Arizona State University

Development of robust, flexible lithium-ion batteries is essential for wearable electronics. We identified major failure modes in conventional battery electrodes under repeated mechanical deformation and identified new strategies for improving flexibility and performance of batteries integrated into textiles. Our research elucidates how repeated flexing impacts battery reliability and identifies mitigation strategies for enhancing the performance and durability of high energy density, wearable power sources.

4:25 PANEL DISCUSSION: The Defense Battery Opportunity: Building a Resilient Domestic Supply Chain

Moderator: Giuseppe Di Benedetto, PhD, Executive Chief Engineer for Armaments & Munitions Power, US Army DEVCOM Armaments Center

As defense demand for advanced batteries grows, building a resilient domestic supply chain is increasingly critical. This panel brings government and industry perspectives together to examine emerging opportunities, domestic manufacturing capacity, critical supply-chain gaps, and the challenges of scaling production to meet evolving defense requirements.

Panelists:

Ashley L. Ruth, PhD, Senior Electrochemical Engineer, Power, US Army Combat Capabilities Development Command

Alexandra M. Karalekas, Chief Engineer, Power Division, US Army Combat Capabilities Development Command

5:25 Close of Day

THURSDAY, MARCH 18

7:00 am Registration Open and Morning Coffee

INTERACTIVE LEADERSHIP BREAKFAST

7:25 Powering Impact: An Interactive Session on Technology, Market Strategy, and Execution in the Battery Economy



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

The session will center on three practical dimensions: how to position technical concepts in terms of customer value and cost-performance; how to communicate with credibility to executives, investors, and commercial partners; and how project leadership translates vision into milestones that matter.

ENGINEERING, SAFETY, AND QUALIFICATION OF MISSION-CRITICAL BATTERIES

8:25 Chairperson's Remarks

Peter Attia, PhD, Co-Founder & CTO, Glimpse

8:30 High Voltage Battery Integration for More-Electric Aircraft: Pitfalls and Key Design Points

Roger Brewer, Technical Fellow, Lockheed Martin Corp.

This presentation updates last year's work by concentrating on three critical areas for high-voltage battery integration in More-Electric Aircraft. First, we examine interconnect reliability, addressing terminal and insulation wear at high altitude and elevated voltages. Second, we compare safety architectures. Third, we present best-practice design guidelines for battery-management-systems (BMS).

9:00 Battery Qualification in Military Environments

Jeff McCollum, Staff Systems Architect, Northrop Grumman Corp.

Military environments are among the most challenging and demanding settings for a system. Battery-reliant platforms operating in these conditions require rigorous engineering to ensure predictable, reliable, and safe performance. From corrosion and vibration to extreme temperature, humidity, sand, dust, and salt fog, successful certification and deployment depends on understanding the environmental profile it will face over its service life.

9:00 Battery Booth Crawl with Bagels in the Exhibit Hall with Last Chance for Poster Viewing

9:30 Presentation to be Announced

9:45 Sponsored Presentation *(Opportunity Available)*

10:00 Battery Booth Crawl Continues in the Exhibit Hall with Last Chance for Poster Viewing

10:45 From Cell to System: Can Small-Scale Tests Predict Pack-Level Thermal Runaway

Yesaswi Chilamkurti, PhD, High Voltage Battery R&D, BETA Technologies

Lithium-ion cell advancements enable new performance frontiers for electric aircraft such as BETA's ALIA platform. Yet higher-performing cells can change thermal runaway behavior, and those changes may not scale predictably. Our work asks a fundamental question: Can cell-level or small-scale test data alone predict how a full system will behave during thermal runaway? The answer determines whether a "drop-in" cell replacement is a viable path to increasing battery performance.

11:15 From Cell Performance to Mission Confidence: Virtual Mission Testing for Electric Drones across Real-World Operating Conditions

Thomas Glatz, Senior Tech Specialist Simulation, Advanced Simulation Technologies, AVL List GmbH

Open-source flight simulation environments such as ArduPilot and PX4 model aerodynamics and control in detail, but the battery is often reduced to a simplified capacity or state-of-charge representation. This presentation shows how coupling blueflite Cobalt flight data with AVL battery and powertrain simulation and weather-aware 4D mission analysis closes that gap, enabling virtual mission testing that exposes thermal limits, energy reserves, and failsafe margins before flight.

11:45 Sponsored Presentation *(Opportunity Available)*

12:15 pm Enjoy Lunch on Your Own

SCALING DEFENSE BATTERY MANUFACTURING, STANDARDIZATION, AND SUPPLY CHAINS

1:10 Chairperson's Remarks

Candace K. Chan, PhD, Professor, Materials Science & Engineering, Arizona State University

1:15 Accelerating Adoption of Commercial Off-the-Shelf Battery Technologies in Defense Platforms

Katelyn Tomaszewski, Project Manager II, Catalyst Mobility, Inc.

This presentation examines barriers to adopting commercial-off-the-shelf high-voltage battery systems across Department of Defense platforms, drawing on market research and stakeholder engagement with manufacturers, program offices, integrators, and regulators. Key challenges include system compatibility, safety certification, acquisition, and lifecycle sustainment. The presentation highlights opportunities to accelerate technology transition and demonstrates how collaborative Battery Forums align government and industry to advance electrification and energy resilience across defense applications.

1:45 From Factory Startup to High Yield: Lessons Learned Scaling Lithium-ion Cell Production for UAS

Tan Nguyen, PhD, Battery Cell Plant Director, Engineering, Packet Digital

Scaling domestic lithium-ion cell production is critical to strengthening US battery supply chains and meeting growing military and domestic demand, particularly for drones. This presentation shares lessons learned from scaling cell production in Fargo, North Dakota, from pilot batches to high-volume manufacturing. It covers process control, workforce development, equipment optimization, and yield improvement, providing practical insights into accelerating factory ramp-up while building a reliable, high-quality domestic battery manufacturing base.

2:15 Automated Metallic Particle Contaminant Detection in CT Scans of Battery Cells

Peter Attia, PhD, Co-Founder & CTO, Glimpse

Metallic particle contaminants, or foreign object debris (FOD), threaten battery safety by causing internal short circuits. While CT scans are an effective detection method, manual analysis is time-consuming. Here, we present Glimpse's automated particle detection workflow. By using cells with embedded FOD to build a validated ground-truth dataset, our algorithm reliably identifies contaminants across various sizes and compositions. This approach significantly improves efficiency and accuracy in non-destructive FOD detection.

2:45 Process and Considerations for Battery Standardization in Uncrewed Aerial Vehicles: An Update

Lisa King, Director, Advanced Battery Strategy, LEAP Manufacturing

Battery cell standardization is essential to scaling unmanned aerial systems while maintaining performance, interoperability, and supplier flexibility. Building on SAE JA1016 for Group 1 UAS pouch cells, current work applies parametric modeling, cross-format compatibility, and standardized characterization and application specific protocols to advance development of Group 2 and Group 3 cell standards. The approach establishes common technical requirements supporting scalable manufacturing, streamlined qualification, and resilient battery supply chains.

3:15 Transition to Closing Plenary

CLOSING PLENARY PANEL DISCUSSION

3:30 Navigating the Global Battery Growth in Harmony with Shifting US Policy, Demanding Energy Security, and Big-Data Requirements



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

In this plenary closing discussion, we are ending the conference with a thought-provoking and insightful panel of experts led by Christina Lampe-Önnerud to help us think through: where is the US battery market going in the aftermath of the Big Beautiful Bill and how is this different in Europe and Asia? How do we as an industry navigate these uncertain times?

4:30 Close of Conference

HOTEL & TRAVEL INFORMATION

Conference Venue & Host Hotel:

Rosen Shingle Creek
9939 Universal Boulevard
Orlando, FL 32819

To book your discounted room, visit
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2026 Sample Attendees List

International Battery SEMINAR & EXHIBIT

- 3M Co, Global Application Specialist, Automotive & Aerospace Solutions
- Airbus US Space & Defense, Sr Power Systems Engineer
- Amazon, Principal Interdisciplinary Systems Engineer, Operations Infrastructure Svcs
- AMD, Program Mgr, Client & Gaming & Graphics
- Apple Inc, Sr Dir Battery Technology
- Bayer CropScience, Principal Research Scientist, Chemical Process Technology
- Blue Origin, Sr Engineer, Electric Power Systems
- BMW i Ventures, Principal
- Boeing, Test & Evaluation Engineer, BT&E
- Cabot Corp, Lead Scientist, Battery Materials
- Chevron Corp, Commercial Mgr, New Energies
- CSIRO, Sr Experimental Scientist, Energy
- Daimler Truck N America, Battery Cell Specialist, Cell Chemistry & Mechanics
- Dell EMC, Principal Engineer, Regulatory Compliance
- Duracell Inc, R&D Grp Dir Global Design & Material Process Dev
- El DuPont De Nemours & Co, Engineer, Application Dev
- ExxonMobil Corp, Battery Anode Materials Market Dev, Graphite Materials
- Ford Motor Co, Supv Battery Cell Research, Ford Ion Park R&D
- General Dynamics Mission Systems Inc, Principal Engineer, Power Systems & Autonomous Marine Platforms
- General Motors Co, Dir Global Battery R&D
- Google Inc, Staff Battery Engineer, New Technology Introduction
- Hatch Ltd, Global Dir, Battery Metals & Cells
- Honda North America, Dev Research Principal Engineer, Advanced Tech Research
- Honeywell, Battery Gigafactory Process Controls Mfg, Process Mfg
- Hyundai America Tech Ctr Inc, Sr Battery Research Engineer, Advanced Battery Research
- John Deere & Co, Materials Engineer, Battery Engineering
- Johns Hopkins Univ, Dept of Pharmacology
- LG Energy Solution, Sr Mgr Battery Systems Dev, ESMI
- Lockheed Martin, LM Fellow, Electrical Engineering
- Massachusetts Institute of Technology, Postdoctoral Associate, Nuclear
- Science & Engineering Medtronic, Sr Mgr, Battery Research & Technology
- Meta, Battery Cell Engineer, R&D
- Microsoft Corp, Cell Engineer, Battery Dev Team
- Mitsubishi Motors R&D of America Inc, Mgr, EV Powertrain Engineering
- Natl Renewable Energy Lab, Sr Mechanical Engineer, Vehicle
- Technology Integration Nissan N America, Sr Engineer, Battery Dev Powertrain Engineering
- Panasonic Energy Co Ltd, Dir Energy R&D Ctr
- Porsche AG, Head, HV Cell Dev
- Ricoh Co Ltd, GM, 1st Material & Process Dev
- Rivian Automotive, Data Scientist
- S&P Global, Price Reporter, Battery Materials
- Samsung SDI R&D America, Research Engineer, R&D
- Siemens Healthcare Diagnostics Inc, Test Stands Industry Professional, Motion Control
- Sony Corp, Engineer, Power Mgmt Technology Dev
- SpaceX, Battery Engineer, Cell Engineering



- Subaru R&D Inc, Engineer, ADAS & Vehicle Performance Engineering
- Tesla, Sr Staff Engineer, Cell Engineering
- Texas Instruments Inc, Head of Algorithm Dev, Battery Power Systems
- Toyota Motor N America Inc, Principal Engineer Battery EPR & Circularity, Chemicals & Materials Stewardship
- US Army Armament R&D & Engineering Ctr, Power Team Lead & Chemical Engineer
- Volkswagen Grp of America, Team Lead CoE, Battery Pre Dev

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March 15-18, 2027

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TUT1: Technology Innovation in the China Battery Industry	TUT7: Improving the Energy Density of Batteries with Silicon-Based Anodes
TUT2: Battery Safety and Abuse Tolerance Validation	TUT8: Li-ion Battery Modeling
TUT3: Battery Recycling: Market and Methods	TUT9: The Rechargeable Battery Market Value Chain and Main Trends
TUT4: Cathode Active Materials: The Strategic Core of Performance, Cost, and Sustainability	TUT10: AI in Battery Development
TUT5: Na-ion Batteries: Materials and State-of-the-Art	TUT11: Solid-State Batteries
TUT6: Cell & Pack Design	TUT12: Li-ion Cell Design and Manufacturing

Monday Symposium

S1: **Battery Raw Materials and Recycling**

Venture/Partnering MONDAY - TUESDAY

VP5A: **Battery Venture, Innovation & Partnering IN PERSON ONLY**

Main Seminar Conferences

TUESDAY - WEDNESDAY MORNING	WEDNESDAY AFTERNOON - THURSDAY
C1A: **Next-Generation Battery Chemistries**	C1B: **Lithium-ion Battery Chemistry**
C2A: **High-Performance Battery Manufacturing**	C2B: **Global Battery Manufacturing Production**
C3A: **Battery Safety and Engineering**	C3B: **Large-Scale Energy Storage**
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