

The Future Will Be Driven by Vehicle Electrification

15th INTERNATIONAL **aabc** advanced europa automotive europe battery conference

23-26 JUNE 2025 | MAINZ, GERMANY

2025 CONFERENCE PROGRAMS

PRE-CONFERENCE TUTORIALS: MONDAY 23 JUNE

TUESDAY & WEDNESDAY 24-25 JUNE



CHEMISTRY - PART 1



ENGINEERING



HEAVY DUTY



MANUFACTURING



RECYCLING



xEV BATTERY
APPLICATIONS

WEDNESDAY & THURSDAY 25-26 JUNE



CHEMISTRY - PART 2



FAST CHARGING
& INFRASTRUCTURE



xEV BATTERY
TECHNOLOGY



MANUFACTURING
PRODUCTION



RAW MATERIALS



BATTERY INTELLIGENCE

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MANUFACTURING PRODUCTION



BATTERY INTELLIGENCE

TOP REASONS TO ATTEND

- » Learn first-hand about the technical and business directions from major automakers currently active in the European market
- » Hear key global market outlook data on the forecasted consumption trends for China, Japan, Korea, Europe and the United States
- » Meet leading energy storage technologists from all automakers active in the European market
- » Discuss fast-charging solutions coming to the market to support electrification goals for the coming decade
- » Get an in-depth international overview of the industry including current trends, competitive analysis and examination of the key players and their strategies for market growth
- » Discover the latest technological advancements in high specific energy batteries with long cycle life and low cost
- » See how key players are overcoming challenges to commercialisation for the specialty EV battery market while assessing consumer demand and competing technologies
- » Understand the many facets of the international battery raw materials market, including advances in mining and processing with an emphasis on sourcing and cost control strategies by manufacturers
- » Network at the largest international gathering of advanced energy storage technology developers and integrators in Europe

FEEDBACK FROM PREVIOUS EVENTS

"People show what will be the future, but it's also dealing with practical questions, it's not just a dream."

- Muriel Desaegeer, PhD, Toyota Motor Europe

"We see experts from the car companies, the battery suppliers, and the system integrators. The presentations are of excellent quality."

- Eckhard Karden, PhD, formerly Ford Research Center

"The annual visit of AABC is a must for any developer or scientist working on battery technologies for automotive applications."

- Arnold Lamm, PhD, e-Technologies GmbH, formerly Daimler AG

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23 JUNE 2025 | MAINZ, GERMANY

TUTORIALS*

*All Access or separate registration required

MONDAY 23 JUNE 10:00-11:30

TUT1: Solid-State Batteries

Instructor:
Juergen Janek, PhD, Professor, Solid-State Ionics & Electrochemistry, Justus Liebig University, Giessen

TUT2: Na-ion Batteries: Materials and State of the Art

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

TUT3: Battery Sustainability

Instructor:
Stefan Debruyne, Director of External Affairs, SQM International

TUT4: Technology Innovation in the Chinese Battery Industry

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

MONDAY 23 JUNE 13:00-14:30

TUT5: Li-ion Cell Design and Manufacturing

Instructor:
James Kaschmitter, CEO, SpectraPower LLC

TUT6: Battery Recycling Methods

Instructor:
Steve Sloop, PhD, President, OnTo Technology LLC

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

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

TUT8: The Rechargeable Battery Market: Value Chain and Main Trends

Instructor:
Christophe Pillot, PhD, Director, Avicenne Energy

MONDAY 23 JUNE 15:00-16:30

TUT9: Cell and Pack Design for xEVs

Instructor:
Kevin Konecky, Vice President, Battery Systems Engineering, Ola Electric

TUT10: In-Depth Analysis of the Chinese xEV Battery Market

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

TUT11: Battery Intelligence

Instructor:
Kevin Wood, PhD, Director, Battery Consulting & Services, Voltaiq, Inc.

TUT12: 21st Century Battery Raw Materials

Instructors:
Shruti Kashyap, Product Director, Benchmark Mineral Intelligence
William Talbot, Research Manager, Benchmark Mineral Intelligence

FEEDBACK FROM PREVIOUS EVENTS

"Must-attend conference if you are working on batteries for automotive electrification. It tells us always the latest and hottest topics, worldwide trends, and is a good networking opportunity."

- Masato Origuchi, Automotive Cells Company, formerly Renault

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24-25 JUNE 2025 | MAINZ, GERMANY

LITHIUM BATTERY CHEMISTRY — PART 1

Advancements in Lithium-ion and Beyond

MONDAY 23 JUNE

8:00 Registration Open

TUESDAY 24 JUNE

7:30 Registration and Morning Coffee

8:30 Organizer's Remarks

Victoria Mosolgo, Conference Producer, Cambridge EnerTech

ADVANCES IN LITHIUM-ION

8:35 Chairperson's Remarks

Martin Winter, PhD, Director & Professor, Electrochemical Energy Technology, University of Muenster

8:40 Challenges in Future Cell Chemistry for Sports-Car Application

Congcong Shang, PhD, Battery Cell Responsible, Ferrari SpA

In the racing of future cell technologies, numerous players are in the battle, with several chemistry systems in competition. In addition to the fundamental challenges, there are additional challenges in automotive application. In the sector of sports cars, those challenges are further amplified. This talk will give an overview, in our perspective, about the common challenges on future cell chemistry.

9:00 Ultra-High Power Round Li-ion Cell Design for High-Performance Applications

Verena Drews, Head of Product Development & Engineering, V4SMART GmbH & Co. KG

Conventional round lithium-ion cells suffer from high temperature increase due to high internal resistance and, therefore, cannot provide the actual available performance. Hence, V4SMART develops and produces lithium-ion cells in Germany with a new mechanical cell design in combination with unique electrode and electrolyte recipes to enable new high-power applications.

9:20 Advanced & beyond Lithium-ion Technologies for Mobility Applications

Patrick Bernard, PhD, Director, Research, SAFT

Saft is developing new Li-ion products reflecting current market needs in mobility applications: LTO cell for heavy cycling, phosphate-based technologies LFP, LMFP for safety critical. Next generation materials will allow the development of future generations of Li-ion batteries: HV phosphates cathodes, Si rich anodes and niobium oxide-based anodes. Beyond advanced Li-ion batteries, Saft develops in parallel solid state technologies following polymers and sulfides pathways.

9:40 MODERATED Q&A: Session Wrap-Up

Moderator: Martin Winter, PhD, Director & Professor, Electrochemical Energy Technology, University of Muenster

Panelists:

Congcong Shang, PhD, Battery Cell Responsible, Ferrari SpA

Verena Drews, Head of Product Development & Engineering, V4SMART GmbH & Co. KG

Patrick Bernard, PhD, Director, Research, SAFT

10:00 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)

CATHODES

11:00 Conductive Additives: Tailored Solutions Enabling High-Performance Cathodes

Simon Lorger, PhD, New Business Development Manager, Cabot Corporation

Cabot's conductive additives, including conductive carbons, carbon nanotubes, and carbon nanostructure dispersions, are critical components of lithium-ion batteries, making up a small fraction of the battery composition but playing a crucial role in functionality and performance. The ability to tailor dispersions

using novel and commercial conductive additives shows clear benefits in imparting electronic conductivity at the lowest loadings enabling high performance for various cell chemistries.

11:20 High-Capacity Negative Electrodes

Egbert Figgemeier, PhD, Senior Manager, IEK 12, Helmholtz Institute Muenster

Replacing carbon-based materials with silicon in negative electrodes for lithium-ion-batteries promises a boost of capacity and is therefore a major R&D topic. Nevertheless, widespread commercial automotive applications with silicon-modified anodes are still at the horizon, but not a commercial fact. Issues regarding volume variations, particle disintegration, and electrolyte consumption are hurdles still to overcome. The presentation will summarise latest efforts and prospects with regard to commercialisation of silicon-based anodes.

11:40 Presentation to be Announced

12:00 MODERATED Q&A: Session Wrap-Up

Moderator: Martin Winter, PhD, Director & Professor, Electrochemical Energy Technology, University of Muenster

Panelists:

Simon Lorger, PhD, New Business Development Manager, Cabot Corporation

Egbert Figgemeier, PhD, Senior Manager, IEK 12, Helmholtz Institute Muenster

12:20 Networking Luncheon (Sponsorship Opportunity Available)

13:15 Dessert Break in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)

SOLID-STATE

13:45 Chairperson's Remarks

Juergen Janek, PhD, Professor, Solid-State Ionics & Electrochemistry, Justus Liebig University, Giessen

13:50 Solid-State Batteries

Juergen Janek, PhD, Professor, Solid-State Ionics & Electrochemistry, Justus Liebig University, Giessen

In this presentation, the current status of sulfide-based SSBs and the recent development of halide solid electrolytes will be briefly discussed, as well as the potential need for targeted design of cathode active materials for SSBs

14:10 Solid Oxide and Sulfide Electrolytes for Safe Ultra-High-Energy Density Batteries

Steven Visco, PhD, CEO & CTO, PolyPlus Battery

The demand for safe high-energy-density batteries motivates the development of solid-state batteries and solid electrolytes. PolyPlus develops next generation batteries based on both oxides and sulfides, and has demonstrated specific energies in excess of 1500 Wh/kg for advanced 500 Ah batteries. In this presentation we will address the challenges and solutions to the development and fabrication of rechargeable solid-state and primary lithium metal next generation batteries.

14:30 Solid-State Batteries: Opportunities and Challenges

Fan Xu, PhD, Senior Researcher, Energy Storage, General Motors

As the EV industry continues searching for the next-generation battery technology aiming for higher energy density and greater safety, solid-state batteries (SSBs) have received a resurgence of interest across the entire industry as well as the relevant academic fields. This talk will highlight the unique advantages and fundamental challenges of SSBs for foreseeable EV applications on its way to an All-Electric future in GM.

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LITHIUM BATTERY CHEMISTRY — PART 1

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

CATHODES

15:40 PFAS-Free Lithium Batteries

Stefano Passerini, PhD, Distinguished Senior Fellow, Electrochemistry for Batteries, Karlsruhe Institute of Technology

Hazardous PFAS in lithium batteries raise safety concerns, primarily used in cathodes but removed from anodes. Aqueous binders and H_3PO_4 prevent cathode degradation. A new PFAS-free electrolyte with anisole enhances ion transport and SEI formation, achieving 99.71% Coulombic efficiency and stable cycling for 400 and 350 cycles in Li-based cells.

16:00 Olivine Cathode Materials

Chirranjeevi Balaji Gopal, PhD, CTO & Co-Founder, Mitra Chem

LMFP-based cathode materials have been heralded as the next-generation of olivine-based cathode beyond LFP. Yet there are several key technological challenges to be solved ahead of their commercial deployment. This talk will discuss the design trade-offs needed to achieve high-capacity, high-stability LMFP cathode materials, methodologies to gain a mechanistic understanding of synthesis, and electrochemical performance in cells.

16:20 Presentation to be Announced

16:40 MODERATED Q&A: Session Wrap-Up

Moderator: Juergen Janek, PhD, Professor, Solid-State Ionics & Electrochemistry, Justus Liebig University, Giessen

Panelists:

Stefano Passerini, PhD, Distinguished Senior Fellow, Electrochemistry for Batteries, Karlsruhe Institute of Technology

Chirranjeevi Balaji Gopal, PhD, CTO & Co-Founder, Mitra Chem

17:00 Networking Reception in the Exhibit Hall with Poster Viewing
(Sponsorship Opportunity Available)

18:00 Close of Day



WEDNESDAY 25 JUNE

7:15 Registration Open and Morning Coffee

7:30 Interactive Breakout Discussions

Interactive Breakout Discussions are informal, moderated discussions with brainstorming and interactive problem-solving, allowing participants from diverse backgrounds to exchange ideas and experiences and develop future collaborations around a focused topic.

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Moderator: Chloe Herrera, Energy Storage Analyst, Lux Research

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TABLE 6: Battery Modelling

Moderator: Michael Schoenleber, Co-Founder & CTO, Batemo GmbH

TABLE 7: Solid-State Batteries

Moderator: Venkataraman Thangadurai, PhD, Chair in Energy & Faraday Institution; Adjunct Professor, School of Chemistry, University of St. Andrews

TABLE 8: European Battery Market

Moderator: Ines Miller, Team Lead Battery Cells, E Mobility, P3 Automotive GmbH

TABLE 9: Battery AI & Machine Learning

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8:25 Organizer's Remarks

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SOLID-STATE

8:30 Chairperson's Remarks

Egbert Figgemeier, PhD, Senior Manager, IEK 12, Helmholtz Institute Muenster

8:35 Presentation to be Announced



8:55 Electrode and Cell Design for Sulfide Electrolyte-Based Solid-State Batteries

Holger Althues, PhD, Head, Chemical Surface Technology Group, Fraunhofer Institute for Material & Beam Technology

Sulfidic solid-state electrolytes enable the efficient solid-solid conversion of sulfur and suppress any polysulfide diffusion in solid-state Li-S cells. Further, high-energy Li-S cells were built and evaluated utilizing a semi-solid concept. Based on those results, the talk will cover recent progress in materials, processes, and cell design for solid-state Li-S batteries.

9:15 Oxide-Ceramic Based All-Solid-State Batteries: Advanced Anode and Cathode Processing

Martin Finsterbusch, PhD, Group Leader, Solid State Batteries, Forschungszentrum Juelich GmbH

Industrial scale oxide-ceramic solid-state batteries (ASBs) remain a major challenge. In this talk, two new strategies are presented to push ASBs towards industrialisation. First, the successful incorporation of the synthesis of garnet LLZO into cathode manufacturing led to 80% energy and time savings. Second, a new method to produce 3D interface engineered Li-metal anodes pushed the CCD of LLZO to $> 5\text{mA}/\text{cm}^2$ and stable stripping/plating to more than 800 cycles.

9:35 Solid-State Batteries

Venkataraman Thangadurai, PhD, Chair in Energy & Faraday Institution; Adjunct Professor, School of Chemistry, University of St. Andrews

I would like to present recent advances in solid-state membranes for intercalation electrodes and also conversion electrodes, especially sulfur cathodes. Li-stuffed garnets and sodium silicates for next-generation batteries will be discussed.

9:55 Towards GEN4 Li-Metal Battery: State-of-the-Art Advances and Perspectives



Sofia Perticarari, Electrochemistry Innovations Manager, Blue Solutions

Lithium metal batteries are foreseen as a key innovation in order to support electrification and an always growing in-vehicle energy density. This ultimately translates for EV owners to higher autonomies. Satisfying customers also mean achieving fast-charging system and allowing wide temperature range operation.

The presentation will disclose the current development status of Blue Solutions GEN4 cells. Based on a 12-year industrial experience and with more than 3 million cells produced, Blue Solutions is a pioneer of solid-state batteries with its Lithium-Metal-Polymer (LMP[®]) technology. Allying real field experience with advanced research the target is bringing the right product, to the passenger mobility, by the end of the decade.



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Panelists:

Holger Althues, PhD, Head, Chemical Surface Technology Group, Fraunhofer Institute for Material & Beam Technology

Martin Finsterbusch, PhD, Group Leader, Solid State Batteries, Forschungszentrum Juelich GmbH

Venkataraman Thangadurai, PhD, Chair in Energy & Faraday Institution; Adjunct Professor, School of Chemistry, University of St. Andrews

10:35 Coffee Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

ADVANCING BATTERY TECHNOLOGIES: SUSTAINABLE INNOVATIONS FOR ELECTRIC VEHICLES

11:20 Electrolyte- The Hidden Component

Kolja Beltrop, PhD, CTO, E-Lyte Innovations GmbH

E-Lyte aims to provide a sustainable and resilient supply chain for the perfect electrolyte solution for each energy storage system. The automotive industry currently has the greatest need for safe and powerful energy storage systems. The presentation will answer the question of why it is so difficult to find the perfect electrolyte for commercial battery technologies used in electric vehicles and how E-Lyte overcomes this challenge.

11:40 Novel Highly Conductive and Sustainable Additive for Improved Cell Performance

Steven Lacey, PhD, Senior Battery Scientist, Huntsman Advanced Materials

A novel CNT-like additive which is produced in a sustainable way will be introduced. The performance increase vs. carbon black will be shown in various cell-formats and cell chemistries i.e. NMC 85, NMC 532, LFP, LMFP. Data on long cycle life tests and severe charge and discharge rates will be presented.

12:00 Low-Cost and Abundant Metallurgical Si Anodes for EVs

Jonathan Tan, CEO, Coreshell

Metallurgical Silicon (MG-Si) is an abundantly found and low-cost form of silicon. The advantages of this material is that it is produced widely in North America + Europe allowing diversification away from Chinese-manufactured graphite to establish domestic supply chains, increases the energy density of the cell (10x specific energy of graphite) allowing for lighter and smaller batteries, and dramatically reduces the total cost of the battery system.

 Coreshell

12:20 MODERATED Q&A: Session Wrap-Up

Moderator: Egbert Figgemeier, PhD, Senior Manager, IEK 12, Helmholtz Institute Muenster

Panelists:

Kolja Beltrop, PhD, CTO, E-Lyte Innovations GmbH

Steven Lacey, PhD, Senior Battery Scientist, Huntsman Advanced Materials

Jonathan Tan, CEO, Coreshell

12:40 Networking Luncheon (Sponsorship Opportunity Available)

13:30 Dessert Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

14:00 Close of Conference



24-25 JUNE 2025 | MAINZ, GERMANY

EV TECHNOLOGY FOR HEAVY-DUTY APPLICATIONS

Exploring Innovation in HEV Batteries and Infrastructure

MONDAY 23 JUNE

8:00 Registration Open

TUESDAY 24 JUNE

7:30 Registration and Morning Coffee

8:30 Organizer's Remarks

Sarah Stockwell, PhD, Conference Producer, Cambridge EnerTech

BATTERY TECHNOLOGY & SAFETY

8:35 Chairperson's Remarks

Allan Paterson, PhD, Head, Battery Development, Fortescue ZERO

8:40 Presentation to be Announced

9:00 Implementation of Fast-Charge Batteries for Heavy-Duty Applications

Brian Barnett, PhD, CTO, Nyobolt

Batteries capable of fast charge hold great interest for electrification of multiple heavy-duty applications. These require many charge-discharge cycles, often high discharge power, and limited tradeoff of energy density. Fast charge supports higher uptime and work rates. Nyobolt is working with partners in robotics, mining, and construction to implement batteries capable of 5-10 minute full SOC charging, high cycle-life, and acceptable thermal attributes. Technology and implementation efforts are described.

9:20 RS Zero: An Emission-Free Vehicle Solution for Regional Rail Lines

Raphaela Sing, System Engineer for Traction Batteries, Stadler Deutschland GmbH

Rail is the most climate-friendly transport, yet one in four German trains still uses fossil fuels due to limited overhead lines. Hydrogen-powered trains, like Stadler RS Zero, offer a zero-emission solution for non-electrified routes by using hydrogen engines to power battery systems. Designed for reliability and long-term operation, Stadler's innovative hydrogen-battery hybrid train meets the high demands of sustainable rail transport while addressing infrastructure challenges.

9:40 MODERATED Q&A: Session Wrap-Up

Moderator: Allan Paterson, PhD, Head, Battery Development, Fortescue ZERO

Panelists:

Speaker to be Announced, Echion Technologies LTD

Brian Barnett, PhD, CTO, Nyobolt

Raphaela Sing, System Engineer for Traction Batteries, Stadler Deutschland GmbH

10:00 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)

11:00 Battery Design for Prevention of Thermal Propagation

Denis Gorman, Head of Batteries & High Voltage Systems, FutureMotiv

Cell-to-cell propagation of thermal runaway can accumulate to a catastrophic magnitude failure. This talk will present pack-level design features which prevent this propagation, including features such as thermal barriers, conductive shields, and vent gas evacuation.

11:20 How to Reach Targets for Heavy-Duty Applications while Keeping Cell Safety

Dragoljub Vrankovic, PhD, Manager, Team Cell Technology, Daimler Truck

Battery-electric trucks are the future backbone of the transport industry—combining maximum energy efficiency with good flexibility. Daimler Truck AG has proven how capable these electric trucks can be with several global projects and products. This presentation will investigate the special needs of batteries and cells for commercial vehicles, focusing on cell chemistry and safety.

11:40 Presentation to be Announced

12:00 MODERATED Q&A: Session Wrap-Up

Moderator: Allan Paterson, PhD, Head, Battery Development, Fortescue ZERO

Panelists:

Denis Gorman, Head of Batteries & High Voltage Systems, FutureMotiv

Dragoljub Vrankovic, PhD, Manager, Team Cell Technology, Daimler Truck

Speaker to be Announced, Stropower Technologies Co Ltd

12:20 Networking Luncheon (Sponsorship Opportunity Available)

13:15 Dessert Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

CHARGING & BATTERY MANAGEMENT

13:45 Chairperson's Remarks

John Forgie, PhD, Electrochemistry Senior Manager, Accelera by Cummins

13:50 From Algorithms to Users: Optimising Charging Strategies for Performance and Satisfaction

Anna Fedorova, Senior Battery Algorithms Engineer, Iveco Group

The presentation examines how charging strategies influence user-facing metrics, including State of Charge (SoC) and State of Health (SoH). The focus is on how optimised charging affects battery performance and user satisfaction. Key Performance Indicators (KPIs) for evaluating charging strategies are defined as the energy delivered to the battery and the charging time. The discussion emphasises balancing technical efficiency with practical user needs for a better charging experience.

14:10 Reducing Risk in Heavy Industry—Warranty, Safety, and Uptime

Tom Maull, Manager, Technical Strategy, Elysia Battery Intelligence

Integrating Elysia Battery Intelligence and with Fortescue's Fortex FMS and autonomous operation in electrified mines creates new business models, enabling ultra-low-cost, sustainable mining. By optimising battery performance to mine requirements, predicting downtime, and extending battery lifespan, advanced analytics reduce costs and energy waste. Combined with full-time autonomous operation, this approach maximises efficiency, minimises labor expenses, and ensures continuous productivity, driving the next generation of cost-effective, sustainable mining practices.

14:30 Autonomous Megawatt Charging—The New Normal

Marc-Andre Beck, Founder & CEO, Grivix GmbH

Advances in battery technology, cooled cables, cooled inlets and autonomous systems are making six-minute megawatt charging a reality for heavy-duty EVs. Grivix's innovations, including lightweight cooled cables, cooled inlets, and automated charging systems, redefine infrastructure planning and operational efficiency. This presentation explores the timeline for deployment, technical challenges, and the transformative impact of megawatt charging on heavy-duty industries.

14:50 MODERATED Q&A: Session Wrap-Up

Moderator: John Forgie, PhD, Electrochemistry Senior Manager, Accelera by Cummins

Panelists:

Anna Fedorova, Senior Battery Algorithms Engineer, Iveco Group

Tom Maull, Manager, Technical Strategy, Elysia Battery Intelligence

Marc-Andre Beck, Founder & CEO, Grivix GmbH

15:10 Refreshment Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

15:40 Immersion-Cooled Battery Technology and High-Speed BMS

Nicolas Jaeckel, PhD, Team Leader, LION Smart GmbH

Immersion-cooled battery technology enhances thermal management by submerging cells in a dielectric fluid, improving battery dynamics and efficiency. Combined with high-speed Battery Management Systems (BMS), which includes Electric Impedance Spectroscopy (EIS), this innovation optimises

STROPPOWER
选海技术





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EV TECHNOLOGY FOR HEAVY-DUTY APPLICATIONS

Exploring Innovation in HEV Batteries and Infrastructure

performance and ensures safety even in very high-charging and discharging rates. The integration of these technologies is key for advancing battery performance, offering higher power density, and faster charging.

16:00 High-Power Solutions: Durable and Ultrafast Charging Technologies

Linus Froboese, PhD, CTO, Skeleton Technologies GmbH

Skeleton Technologies leverages ultrafast charging capabilities—under a second for SuperCapacitors and 60 seconds for SuperBatteries—and exceptional durability, exceeding 1,000,000 cycles for Supercapacitors and 50,000 for SuperBatteries. Powered by proprietary curved graphene, these solutions deliver over 2,000C for heavy-duty applications, optimising power-to-energy ratios and reducing total cost of ownership. Applications include automotive on-board stabilisation and emission reduction in vocational trucks, advancing sustainable and high-performance energy storage solutions.

16:20 Immersion Cooling Technology: Unlocking Safe and Powerful Heavy-Duty Electrification

Sean Chiang, Business Development Manager, Business Development, Xing Mobility Inc

By integrating immersion cooling battery technology with innovative architectures such as Cell-to-Pack (CTP) and advanced software solutions with active safety mechanisms, XING Mobility delivers tailored electrification solutions for heavy-duty applications. Designed for demanding environments, these solutions provide superior thermal management, enhanced safety, and high-rate operation, redefining heavy-duty electrification with greater performance and reliability.

Successfully deployed across mobility markets, this session will explore real-world applications, system integration strategies, and advancements in CTP and Cell-to-Chassis (CTC) architectures. We will demonstrate how immersion cooling technology is transforming energy storage for heavy-duty applications, enabling higher performance, greater reliability, and scalable electrification solutions for the next generation of industrial and commercial vehicles.

16:40 MODERATED Q&A: Session Wrap-Up

Moderator: John Forgie, PhD, Electrochemistry Senior Manager, Accelera by Cummins

Panelists:

Nicolas Jaeckel, PhD, Team Leader, LION Smart GmbH

Linus Froboese, PhD, CTO, Skeleton Technologies GmbH

Sean Chiang, Business Development Manager, Business Development, Xing Mobility Inc

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BATTERY TECHNOLOGY

8:30 Chairperson's Remarks

Linus Froboese, PhD, CTO, Skeleton Technologies GmbH

8:35 Sponsored Presentation (Opportunity Available)

8:55 Electrochemistry Considerations for HEV Batteries on Heavy-Duty Trucks

John Forgie, PhD, Electrochemistry Senior Manager, Accelera by Cummins

With concerns on range, cost, and charging infrastructure to mass adoption of BEV heavy-duty trucks, hybrid battery powertrains offer an alternative that combines the traditional ICE with a battery to provide an intermediate step towards electrification. The electrochemistry considerations and performance requirements in cell design differs to that of BEV, which will be discussed in the various levels of hybridisation as investigated at Accelera.

9:15 BEV Systems for Underground Mining Applications

Tommi Valkonen, New Technology Strategy Manager - Load and Haul, Sandvik Mining and Rock Solutions

Battery-electric heavy duty vehicles face very different challenges in a mining environment compared to on-road BEVs. This talk will give an overview of typical duty cycles that actual, deployed underground mining BEV fleets see, how a vehicle-battery-charger system is optimized for this type of application, and what are OEMs looking for in emerging battery technology to enable the next horizon of improvements.

9:35 Driving Electrification: From Race Track to Heavy-Duty and Mine Site

Allan Paterson, PhD, Head, Battery Development, Fortescue ZERO

At Fortescue Zero, we are leveraging our experience in the design and development of high-performance batteries, including motorsports and off-road BEV systems, to accelerate the electrification and engineering of heavy-duty and mining vehicles. This presentation will highlight our recent advancements in system design, integration, and battery management that are enablers for our heavy-duty electrification and vehicle programmes.

9:55 Sponsored Presentation (Opportunity Available)

10:15 MODERATED Q&A: Session Wrap-Up

Moderator: Linus Froboese, PhD, CTO, Skeleton Technologies GmbH

Panelists:

John Forgie, PhD, Electrochemistry Senior Manager, Accelera by Cummins

Tommi Valkonen, New Technology Strategy Manager - Load and Haul, Sandvik Mining and Rock Solutions

Allan Paterson, PhD, Head, Battery Development, Fortescue ZERO

10:35 Coffee Break in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)





24-25 JUNE 2025 | MAINZ, GERMANY

EV TECHNOLOGY FOR HEAVY-DUTY APPLICATIONS

Exploring Innovation in HEV Batteries and Infrastructure

HEAVY-DUTY MARKET & INITIATIVES

11:20 Battery Technology Evolution: A 10-Year Review on the Deployment of Electric Buses in Luxembourg and Its Impact on Charging Infrastructure

Laurent Bravetti, Director, Volvo Bus Luxembourg, Volvo Bus Corporation
Electromobility is deeply embedded in the DNA of Volvo Bus. Since the deployment of the first 100% electric buses in 2017 in Luxembourg, the continuous development of battery technologies has enabled Volvo Bus to support the national authorities in their goal of providing a 100% decarbonised public transport system by 2030. The evolution of battery capacities has significantly impacted charging strategies and opened up new horizons.

11:40 Progress & Next Steps for the UK Government's Zero Emission HGV & Infrastructure Demonstrator (ZEHID) Programme

Isabella Panovic, PhD, Programme Manager, Innovate UK
Innovate UK is working with the UK Department for Transport to invest up to £200 million in the Zero Emission HGV & Infrastructure Demonstration (ZEHID) programme. The ZEHID programme is funding the demonstration over 350 zero emission heavy goods vehicles across over 70 new infrastructure locations. In this presentation, I will share progress and updates from the demonstration, and an overview of the programme's origins, aims, and ambitions.

12:00 Decarbonising the European Truck Fleet: Policies, Technologies, and Infrastructure

Hussein Basma, PhD, Researcher, Heavy Duty Vehicles, International Council on Clean Transportation

Decarbonising the European truck fleet is essential for Europe to meet its short- and long-term climate goals. This presentation introduces the most recent developments regarding Europe's decarbonisation efforts, focusing on existing policies and regulations, available truck technologies, and the need for a pan-European charging infrastructure.

12:20 MODERATED Q&A: Session Wrap-Up

Moderator: Linus Froboese, PhD, CTO, Skeleton Technologies GmbH

Panelists:

Laurent Bravetti, Director, Volvo Bus Luxembourg, Volvo Bus Corporation

Isabella Panovic, PhD, Programme Manager, Innovate UK

Hussein Basma, PhD, Researcher, Heavy Duty Vehicles, International Council on Clean Transportation

12:40 Networking Luncheon (Sponsorship Opportunity Available)

13:30 Dessert Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

14:00 Close of Conference



24-25 JUNE 2025 | MAINZ, GERMANY

BATTERY RECYCLING

Advanced Recycling Methods for Sustainable Battery Materials Supply

MONDAY 23 JUNE

8:00 Registration Open

TUESDAY 24 JUNE

7:30 Registration and Morning Coffee

8:30 Organizer's Remarks

Craig Wohlers, General Manager, Cambridge EnerTech

RECYCLING-MARKET DEMAND

8:35 Chairperson's Remarks

Steve Sloop, PhD, President, OnTo Technology LLC

8:40 Opportunities and Challenges for Closed Loop within Europe

Aki Fujita, Research & Consulting, Arthur D. Little Consulting

Currently, the European recycling supply chain is not a complete closed loop within the region, and the challenges include: (1) "leakage" of black mass to Asia, (2) economies of scale sufficient to ensure profitability, and (3) lack of pCAM factories. This presentation will discuss the challenges and business opportunities for establishing a closed loop supply chain within Europe in the future.

9:00 Battery Recycling, Black Mass, and the Circular Economy: How Will Recyclers Remain Profitable amid an Oversupplied Metal Market?

Luke Sweeney, Lithium-ion Battery Recycling Specialist, Fastmarkets

2022 saw record highs in metal prices which fuelled a flurry of new business ventures into the battery recycling sector. The crash in lithium, nickel, and cobalt prices, amid persistent metal oversupply, has seen a huge readjustment in the recycling market. Staying informed and ahead of market trends is now essential in order to stay afloat amid the squeeze on metal prices.

9:20 Building Local and Circular Lithium-ion Recycling Solutions and Networks

Christian Lafrance, Director, Lithion Technologies

Accomplishing full circularity is a challenge today. Taking a chance in a market to be a leader is a real leap of faith. How do you convince your management to start a circularity project? You need to balance feed stock markets, logistics, technology, and partnerships. This is what we have learned and what we want to make you benefit from so you can become a circularity agent.

9:40 MODERATED Q&A: Session Wrap-Up

Moderator: Steve Sloop, PhD, President, OnTo Technology LLC

Panelists:

Aki Fujita, Research & Consulting, Arthur D. Little Consulting

Luke Sweeney, Lithium-ion Battery Recycling Specialist, Fastmarkets

Christian Lafrance, Director, Lithion Technologies

10:00 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)

11:00 The Circular Economy Solution for Batteries

MJ Choi, Head of Business Development EU, Green Li-ion

Today, the European LIB industry relies heavily on battery materials and its recycling, primarily sourced from Asia. This dependence leads to longer transportation distances, inefficient and resource-intensive recycling processes, and increased carbon emissions. Green Li-Ion's on-site, economical, and environmentally friendly battery recycling technology aims to unlock Europe's recycling potential and foster a circular economy for lithium-ion batteries by domestically remanufacturing battery-grade materials.

ADVANCED RECYCLING METHODS

11:20 Beyond Battery Recycling: Bringing the Hydro-to-Cathode Direct Precursor Synthesis Process to Europe

Speaker to be Announced, Ascend Elements

The terms "circularity" and "closed loop" are often used to describe battery recycling processes like pyrometallurgy and hydrometallurgy, but these traditional recycling processes are just the first steps in any round-trip journey of battery materials. To truly "close the loop," we must go beyond battery recycling and return recycled battery materials to the battery supply chain as engineered cathode precursor (pCAM) or cathode active materials (CAM). Ascend Elements is pioneering closed-loop battery materials engineering in the United States with the patented Hydro-to-Cathode Direct Precursor Synthesis technology, and the company plans to build a new €1.5 billion pCAM manufacturing campus in Europe by 2028.



11:40 Advancements in Debonding Technology: Enabling the Repair and Recycling of Bonded Components in Sustainable Battery Systems

Philipp tho-Pesch, Specialist Sustainable Batteries, Product Development Battery Solutions, Henkel AG & Co. KGaA

Elizaveta Kessler, Manager Power Storage, Business Development eMobility EU, Henkel AG & Co. KGaA



The development of Cell-to-X platforms for electric vehicles (EVs) faces significant challenges related to structural integrity, particularly in the bonding of battery cells to housings, which complicates safe dismantling for recycling or second-life use.

Debonding technology offers a promising solution by providing controlled adhesion, ensuring strong bonds during use while allowing for easy detachment during disassembly.

This session will delve into the science behind debonding technology, showcasing performance metrics, design considerations, and real-world test results that support the development of sustainable EV battery systems.

12:00 MODERATED Q&A: Session Wrap-Up

Moderator: Steve Sloop, PhD, President, OnTo Technology LLC

Panelists:

MJ Choi, Head of Business Development EU, Green Li-ion

Anna Sosnowik, Dir New Bus Dev Europe, New Bus Dev Europe, Ascend Elements

Elizaveta Kessler, Manager Power Storage, Business Development eMobility EU, Henkel AG & Co. KGaA

12:20 Networking Luncheon (Sponsorship Opportunity Available)

13:15 Dessert Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

ADVANCED RECYCLING METHODS

13:45 Chairperson's Remarks

Christian Lafrance, Director, Lithion Technologies

13:50 Analysis of Process Water from Recycling of Lithium-ion Batteries

Sascha Nowak, PhD, Head of Analytics & Environmental, Electrochemical Energy Technology, University of Münster

Water-using recycling processes—such as wet crushing and electrohydraulic fragmentation—generate large amounts of contaminated process water, resulting in increased costs for the disposal of hazardous waste and safety guidelines. To improve wastewater management, safety, and sustainability of water-assisted recycling processes, comprehensive knowledge of the battery components in the water are required. Analytical techniques can play an important role during these processes, including wet shredding processes, wastewater management, and analytical techniques.



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BATTERY RECYCLING

Advanced Recycling Methods for Sustainable Battery Materials Supply

14:10 The Paradigm of Solvent Selection Hydrometallurgy and the Opportunity of Neodecanoic Acid in Nickel Recovery

Blaise Bridier, Performance Liquids Technology Product Professional, ExxonMobil Chemical Europe

The presentation will compare several diluents and provide an overview of the properties that are part of the optimum diluent selection process. Diluents is usually the last parameter that we think about optimising but the right diluent is a tradeoff between extraction efficiency, process robustness, and for sure safety, environmental concerns, and cost. The presentation will also highlight the superior behaviour of the neodecanoic acid for nickel recovery.

14:30 Direct Recycle Cathode-Healing and Battery Deactivation to Improve Cost and Safety of the Value Chain

Steve Sloop, PhD, President, OnTo Technology LLC

Neutralisation of batteries and direct recycling of their materials are critical technologies to improve logistical safety in the supply chain at battery end-of-life, and to reuse scrap in original manufacturing. Onsite recycling to address manufacturing scrap and onsite neutralisation to address generation of class-9 hazards in lithium-ion battery recycling are technologies developed by OnTo; these are available for integration within the industry from the gigafactory to the EV service shop.

14:50 MODERATED Q&A: Session Wrap-Up

Moderator: Christian Lafrance, Director, Lithion Technologies

Panelists:

Sascha Nowak, PhD, Head of Analytics & Environmental, Electrochemical Energy Technology, University of Münster

Blaise Bridier, Performance Liquids Technology Product Professional, ExxonMobil Chemical Europe

Steve Sloop, PhD, President, OnTo Technology LLC

15:10 Refreshment Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

15:40 Electrochemical Lithium Recovery from Spent LFP Batteries

Afkham Mir, PhD, Assistant Professor of Chemical Engineering, BITS Pilani Hyderabad Campus, Birla Institute of Technology and Science

This proposal presents a sustainable electrochemical approach for recovering lithium from spent Lithium Iron Phosphate (LFP) batteries. By leveraging energy-efficient and selective redox processes, the method minimizes chemical waste and environmental impact while offering a cost-effective recycling solution.

16:00 Circular Chemistry in Battery Recycling: BAT Circle 3.0

Tuomas van der Meer, Research Team Leader, VTT

Business Finland has just granted a 13 M€ project where Battery recycling is in a strong focus. This speech would address the project, with separate focus on bipolar membrane electrolysis (BPED) in enabling circular chemistry in Na-based hydrometallurgical process chemistries with potential for increasing both the economical and environmental sustainability.

16:20 Sponsored Presentation *(Opportunity Available)*

16:40 MODERATED Q&A: Session Wrap-Up

Moderator: Christian Lafrance, Director, Lithion Technologies

Panelists:

Afkham Mir, PhD, Assistant Professor of Chemical Engineering, BITS Pilani Hyderabad Campus, Birla Institute of Technology and Science

Tuomas van der Meer, Research Team Leader, VTT

17:00 Networking Reception in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

18:00 Close of Day

WEDNESDAY 25 JUNE

7:15 Registration Open and Morning Coffee

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7:30 Interactive Breakout Discussions

Interactive Breakout Discussions are informal, moderated discussions with brainstorming and interactive problem-solving, allowing participants from diverse backgrounds to exchange ideas and experiences and develop future collaborations around a focused topic.

TABLE 1: The Interdependence of BESS and EV Charging Infrastructure

Moderator: Chloe Herrera, Energy Storage Analyst, Lux Research

TABLE 2: Li-ion NMC Fast Charging New Cells for E-Mobility

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

TABLE 3: Silicon Anodes and Cells

Moderator: Benjamin Park, PhD, Founder & CTO, Enevate Corp.

TABLE 4: Innovations in Recycling Battery Materials & Second Life

Moderator: Steve Sloop, PhD, President, OnTo Technology LLC

TABLE 5: How Can Europe Compete? Developing a Secure & Green Battery Supply Chain

Moderator: Tom Van Bellinghen, Founder, Lithink

TABLE 6: Battery Modelling

Moderator: Michael Schoenleber, Co-Founder & CTO, Batemo GmbH

TABLE 7: Solid-State Batteries

Moderator: Venkataraman Thangadurai, PhD, Chair in Energy & Faraday Institution; Adjunct Professor, School of Chemistry, University of St. Andrews

TABLE 8: European Battery Market

Moderator: Ines Miller, Team Lead Battery Cells, E Mobility, P3 Automotive GmbH

TABLE 9: Battery AI & Machine Learning

Moderator: Tal Sholkklapper, PhD, CEO & Co-Founder, Voltaiq, Inc.

TABLE 10: Battery Pack System Cost and Safety – Will Future xEV Battery Packs Increase in Complexity or Simplify and How Will Cost and Safety Be Impacted?

Moderator: Kevin Konecky, Vice President, Battery Systems Engineering, Ola Electric

8:25 Organizer's Remarks

Craig Wohlers, General Manager, Cambridge EnerTech

ADVANCED RECYCLING METHODS

8:30 Chairperson's Remarks

Sascha Nowak, PhD, Head of Analytics & Environmental, Electrochemical Energy Technology, University of Münster

8:35 Sponsored Presentation *(Opportunity Available)*

8:55 Economic, Environmental, and Technical Challenges of LFP Battery Recycling

Marcel Weil, Scientific Research Group Leader, Research for Sustainable Energy Technologies, ITAS & HIU, Karlsruhe Institute of Technology

LFP batteries are an interesting option to replace NMC batteries in some applications, but not using high-impact materials like Co and Ni. But after use-phase, LFP needs to be recycled. Biggest challenge associated with LFP recycling is the relatively high operational costs/efforts compared to the low value (on economic and environmental level) of the recovered materials. Thus, new recycling routes need to be developed to allow for more efficient recycling.

9:15 New Insights on Direct-Recycling Processes for Lithium-ion Batteries Based on Materials Characterisation

Rodrigo Serna, PhD, Professor, Chemical & Metallurgical Engineering, Aalto University

The processing of end-of-life lithium-ion batteries (LIBs) through mechanical and physical separations, sometimes referred to as "direct recycling," has the advantage of recovering battery active materials with minimal changes in their chemical structure. In this work, we present our recent work on battery materials characterisation methods to better understand and improve the separation processes of active materials, with a focus on froth flotation.

9:35 Which Is Worse for Black-Mass Quality: Pyrolysis or Deep Discharge?

Urs Peuker, PhD, Professor, University of Freiberg

How do different pre-treatments affect black mass in mechanical recycling.



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BATTERY RECYCLING

Advanced Recycling Methods for Sustainable Battery Materials Supply

9:55 Sponsored Presentation (*Opportunity Available*)

10:15 MODERATED Q&A: Session Wrap-Up

Moderator: Sascha Nowak, PhD, Head of Analytics & Environmental, Electrochemical Energy Technology, University of Münster

Panelists:

Marcel Weil, Scientific Research Group Leader, Research for Sustainable Energy Technologies, ITAS & HIU, Karlsruhe Institute of Technology

Rodrigo Serna, PhD, Professor, Chemical & Metallurgical Engineering, Aalto University

Urs Peuker, PhD, Professor, University of Freiberg

10:35 Coffee Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

11:20 Eco-Friendly Direct Battery Recycling Technology and Pilot Plant

Yu-Tack Kim, PhD, CEO, Advanced Battery Recycle

ABR's direct recycling technology provides an innovative, eco-friendly solution for lithium-ion battery recycling. Unlike traditional methods that rely on energy-intensive processes, ABR's approach employs water and ultrasonic techniques to recover cathode and anode materials while retaining their structural integrity for remanufacturing. ABR operates the world's first production line capable of producing 20 tons of remanufactured cathode and anode materials, establishing itself as a pioneer in sustainable battery recycling.

11:40 Pre-Treatment Techniques for Recycling Based on the Condition of EOL EV Batteries

Juseung Lee, PhD, Senior Researcher, LiB Recycling Research Center, POSCO

This study explores pre-treatment techniques for recycling End-of-Life (EOL) electric vehicle (EV) batteries, tailored to their varying conditions, such as charge level, structural integrity, and chemical composition. By evaluating methods like cryogenic crushing, electrical discharge, and chemical stabilisation, the research aims to enhance safety, material recovery efficiency, and environmental sustainability.

12:00 Sponsored Presentation (*Opportunity Available*)

12:20 MODERATED Q&A: Session Wrap-Up

Moderator: Sascha Nowak, PhD, Head of Analytics & Environmental, Electrochemical Energy Technology, University of Münster

Panelists:

Yu-Tack Kim, PhD, CEO, Advanced Battery Recycle

Juseung Lee, PhD, Senior Researcher, LiB Recycling Research Center, POSCO

12:40 Networking Luncheon (*Sponsorship Opportunity Available*)

13:30 Dessert Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

14:00 Close of Conference



24-25 JUNE 2025 | MAINZ, GERMANY

BATTERY ENGINEERING

Building Better Batteries through Improvements in Battery Safety, Cell Engineering, and Battery Management Systems

MONDAY 23 JUNE

8:00 Registration Open

TUESDAY 24 JUNE

7:30 Registration and Morning Coffee

8:30 Organizer's Remarks

Victoria Mosolgo, Conference Producer, Cambridge EnerTech

BATTERY MANAGEMENT

8:35 Chairperson's Remarks

Alwin Tuschkan, Project Manager, IODP, AVL List GmbH

8:40 Battery in Operation: BMS Data Review

Wieslaw Brys, Senior Electrical Engineer, Hardware Design, Amazon Robotics

This talk delves into the operational insights gained from Battery Management System (BMS) data. It highlights key metrics, data analysis techniques, and their role in monitoring battery performance, ensuring safety, and optimizing system efficiency during real-world operation.40

9:00 Battery Management of Cells

Simon Schwunk, Lead HV Battery & Cell Simulation, Energy System, Porsche AG

This will explore the principles and techniques for optimising battery performance, safety, and lifespan.

9:20 Presentation to be Announced

9:40 MODERATED Q&A: Session Wrap-Up

Moderator: Alwin Tuschkan, Project Manager, IODP, AVL List GmbH

Panelists:

Wieslaw Brys, Senior Electrical Engineer, Hardware Design, Amazon Robotics

Simon Schwunk, Lead HV Battery & Cell Simulation, Energy System, Porsche AG

10:00 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)

11:00 Designing a MegaWatt Battery Powertrain for a 30-Seat eVTOL Vehicle

Zi Jian Yeo, Principal Battery Engineer, Battery, Sora Aviation

Powering a 30-seat eVTOL aircraft will require MW level power, or in the order of 5000bhp, that is equivalent to five Tesla S Plaid. This poses a huge engineering challenge for the battery and electric propulsion system, to optimise between weight, performance and safety. Cell to pack integration requires the best design to maximise energy density whilst ensuring safe flight if there is battery fire.

11:20 Unlocking Battery Insights: Advancing Aging Diagnostics with Digital Twins

Serena Carelli, PhD, Battery Modeling, Electra Vehicles Inc.

As electrification accelerates, understanding battery aging is key to improving safety, performance, and longevity. Electra's EnPower Cell Design Studio and Cell Digital Twin transform lab data into actionable insights. In this session, we showcase how integrated degradation modeling and automated diagnostics identify aging modes and mitigation strategies. With real-world use cases, we will also demonstrate how these tools deliver predictive insights to optimise design and ensure future-ready energy solutions.

11:40 Sponsored Presentation (Opportunity Available)

12:00 MODERATED Q&A: Session Wrap-Up

Moderator: Alwin Tuschkan, Project Manager, IODP, AVL List GmbH

Panelists:

Serena Carelli, PhD, Battery Modeling, Electra Vehicles Inc.

Zi Jian Yeo, Principal Battery Engineer, Battery, Sora Aviation

12:20 Networking Luncheon (Sponsorship Opportunity Available)

13:15 Dessert Break in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)

BATTERY MANAGEMENT SYSTEMS

13:45 Chairperson's Remarks

Natalia Lebedeva, PhD, Scientific Project Officer, Energy Storage, European Commission

13:50 Updates in Lithium-Metal Battery Development for Electric Vehicle Applications

William Hudson, PhD, Vice President of Product, QuantumScope

Today's lithium-ion batteries fall short of meeting consumer needs in key areas like driving range, charging speed, and safety. Solid-state lithium-metal batteries have the potential to bridge this gap by enabling longer range, faster charging, and enhanced safety. QuantumScope's VP of Engineering, Will Hudson, will highlight recent developments in solid-state battery technology for automotive applications and discuss innovative commercialization strategies expected to get this technology on the road.

14:10 Advanced BMS Calibration—How Virtual Battery Tests Help to Reduce BMS-Parameter Identification from Weeks to Hours

Alwin Tuschkan, Project Manager, IODP, AVL List GmbH

BMS core functions depend on accurate SOX information, using Equivalent Circuit Models (ECM) which mimic real physics. Typically, ECMs are parameterised through physical tests, taking weeks for Begin of Life (BOL) and months for End of Life (EOL) calibration. However, accurate electrochemical models (EICM) can derive these parameters from virtual tests within hours, significantly reducing testing time and efforts.

14:30 Does the Electric Behavior Sufficiently Describe Battery State of Health?

Anna Stefanopoulou, PhD, William Clay Ford Professor of Technology, University of Michigan

Not for cases with sizeable irreversible swelling from plating or gas evolution. Dimensional changes of cells can be harbingers of poor health.

14:50 MODERATED Q&A: Session Wrap-Up

Moderator: Natalia Lebedeva, PhD, Scientific Project Officer, Energy Storage, European Commission

Panelists:

William Hudson, PhD, Vice President of Product, QuantumScope

Alwin Tuschkan, Project Manager, IODP, AVL List GmbH

Anna Stefanopoulou, PhD, William Clay Ford Professor of Technology, University of Michigan

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

15:40 Stress Behaviour of Cell Barriers & Associated Design Considerations

David Gries, Senior Product Developer, 3M

This presentation provides a comprehensive analysis of the stress behaviour of cell barriers across various battery technologies, including pouch, prismatic, and emerging solid-state batteries. We will examine the stress response of these barriers under different conditions: instantaneous stress response, relaxed stress response, and aged stress response. Additionally, the impact of thermal abuse and grit resistance requirements on the stress response will be reviewed. By combining these factors, we can offer a high-level overview of design considerations for effective stress management in battery systems.

16:00 Advancing Automotive Battery-Pack Safety with Innovative Venting Units

Michael Harenbrock, PhD, Principal Expert, Engineering Electric Mobility, MANN+HUMMEL GmbH

Vents are crucial for battery pack safety, especially under thermal runaway conditions. As battery cell chemistry and pack designs evolve, selecting appropriate venting units becomes increasingly important. The presentation provides an overview of regulatory and technological trends influencing





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Building Better Batteries through Improvements in Battery Safety, Cell Engineering, and Battery Management Systems

vent design and introduces additional features like gas sensors and hot particle filters.

16:20 Presentation to be Announced

16:40 MODERATED Q&A: Session Wrap-Up

Moderator: Natalia Lebedeva, PhD, Scientific Project Officer, Energy Storage, European Commission

Panelists:

David Gries, Senior Product Developer, 3M

Michael Harenbrock, PhD, Principal Expert, Engineering Electric Mobility, MANN+HUMMEL GmbH

Ronnie Tao, Vice President, Business Development, Sales & Marketing, Amprius Technologies

17:00 Networking Reception in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)

18:00 Close of Day

WEDNESDAY 25 JUNE

7:15 Registration Open and Morning Coffee

7:30 Interactive Breakout Discussions

Interactive Breakout Discussions are informal, moderated discussions with brainstorming and interactive problem-solving, allowing participants from diverse backgrounds to exchange ideas and experiences and develop future collaborations around a focused topic.

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8:25 Organizer's Remarks

Victoria Mosolgo, Conference Producer, Cambridge EnerTech

BATTERY SAFETY AND QUALITY

8:30 Chairperson's Remarks

Michael Schoenleber, Co-Founder & CTO, Batemo GmbH

aspen|aerogels

8:35 Advancements in Pressure Management: Elastomeric Materials in Solid-State and Conventional Battery Systems



Katleen Van Nuffel, Senior Technical Service & Development Engineer, Market Development, Rogers Corporation

Elastomeric pads play a pivotal role in pressure management, enabling reliable performance in pouch and prismatic cells while also addressing the unique challenges of solid-state batteries (SSB). Building on previous research, this presentation delves deeper into the influence of pad material selection, presenting new data on mechanical properties and cycle life performance. Additionally, we explore how optimised pressure management enhances interfacial stability and system performance in solid-state batteries.

8:55 Regulatory Requirements for Safety Testing of Battery Electric Vehicles for Their Batteries: An Update on Global Developments

Natalia Lebedeva, PhD, Scientific Project Officer, Energy Storage, European Commission

In this presentation recent changes in the regulatory requirements for safety testing of battery electric vehicles and, where applicable, their batteries are discussed.

9:15 Battery Industry 3.0: How to Compete in a World of Inexpensive, Variable-Quality Batteries

Tal Sholklipper, PhD, CEO & Co-Founder, Voltaiq, Inc.

The battery market is experiencing an oversupply of low-cost cells, spurring new applications but raising concerns over quality and downstream costs like returns and recalls. Amid fierce competition, particularly from China's dominance, the U.S. battery industry faces significant challenges. This session explores strategies for battery producers and OEMs to navigate these pressures, emphasising supply chain management and ensuring product quality throughout the lifecycle.

9:35 Cell Engineering and Prototyping

Rohit Bhagat, PhD, Professor, Centre Director, Centre for E-Mobility and Clean Growth Research, Coventry University UK

As new materials progress from laboratory to commercial reality, a key aspect in predicting final performance is device prototyping. This work demonstrates the effects of cell size and design on prototype prediction of final device performance. Through variation of design and size of Li-ion pouch cells, from single-layer through many layer, relationships with parameters such as capacity, rate, resistance, and lifetime are considered relative to those of final device.

9:55 SafeCore - An Internal Fuse to Help Prevent Thermal Runaway



Jenna King, CEO, Amionx

SafeCore is a material that is coated on the current collector in a battery cell that is responsive to current, temperature and voltage thresholds being reached. When one or any combination of these thresholds is reached, the material either: 1. Decomposes and cuts the flow of electricity in the cell by creating a non-conductive gap, or 2. Creates a high impedance environment. In both cases, thermal runaway is prevented, and the energy is fully released from the cell gradually over time. SafeCore is applied using existing equipment eliminating the need for incremental capital investment or changes to manufacturing techniques. Commercial progress and test results will be discussed.

10:15 MODERATED Q&A: Session Wrap-Up

Moderator: Michael Schoenleber, Co-Founder & CTO, Batemo GmbH

Panelists:

Katleen Van Nuffel, Senior Technical Service & Development Engineer, Market Development, Rogers Corporation

Natalia Lebedeva, PhD, Scientific Project Officer, Energy Storage, European Commission

Rohit Bhagat, PhD, Professor, Centre Director, Centre for E-Mobility and Clean Growth Research, Coventry University UK

10:35 Coffee Break in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)



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BATTERY ENGINEERING

Building Better Batteries through Improvements in Battery Safety, Cell Engineering, and Battery Management Systems

11:20 Mechanical Properties of Real Aged Li-ion Batteries

Gregor Gstrein, PhD, Project Senior Scientist, Graz University of Technology

Aged Li-ion pouch cells from a recent EV were subjected to a mechanical deformation. In comparison with respective fresh cells, they showed a more critical safety relevant behaviour-failure, and subsequent internal short-circuit at a lower deformation level and lower force. In order to identify the component that is mainly responsible for the altered cell behaviour, further coupon tests and microscopic analysis were carried out.

11:40 Beyond Data Correlation: Understanding and Mastering Battery Aging with Fast, Physical, and Accurate Models

Michael Schoenleber, Co-Founder & CTO, Batemo GmbH

In this talk, we introduce a methodology that combines aging measurements, intermediate characterisations, and physical aging models and exemplify it through a case study involving the Molicel INR21700-P50B cell. The underlying idea is to use optimised routines to identify aging physically along the different trajectories of aging tests and to integrate the parameters to simulate the full behaviour of aged cells under all scenarios.

12:00 Engineered Components for Thermoelectrical Insulation Increasing Battery Safety to Zero-TP

oerlikon

Marius Dalinger, Application Engineer, R&D, Oerlikon Friction Systems Germany GmbH

The market expectation to the next generation of battery systems for electric vehicles are longer mileage, shorter charging times as well as increased safety. A Zero-TP concept is the target for future batteries which probably will also be reflected in future regulations. Zero-TP battery systems require a gas guidance concept for handling the hot and conductive gases of a venting cell, an electrical insulation for eliminating the risk of electric arcing and a thermal insulation of critical components. Oerlikon is developing bespoke high temperature resistant products and components to address the challenges of such battery systems. Solutions like pressure and temperatur-triggered gas guiding products (SafeVent), thermoelectrically insulating heat shield and ultrathin electrical insulation components will be presented.

12:20 MODERATED Q&A: Session Wrap-Up

Moderator: Michael Schoenleber, Co-Founder & CTO, Batemo GmbH

Panelists:

Marius Dalinger, Application Engineer, R&D, Oerlikon Friction Systems Germany GmbH

12:40 Networking Luncheon (Sponsorship Opportunity Available)

13:30 Dessert Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

14:00 Close of Conference



24-25 JUNE 2025 | MAINZ, GERMANY

HIGH-PERFORMANCE BATTERY MANUFACTURING

Global Production of Safe, Efficient, Higher Energy Density Batteries

MONDAY 23 JUNE

8:00 Registration Open

TUESDAY 24 JUNE

7:30 Registration and Morning Coffee

8:30 Organizer's Remarks

Craig Wohlers, General Manager, Cambridge EnerTech

BATTERY MANUFACTURING MARKET EXPANSION & SUSTAINABILITY

8:35 Chairperson's Remarks

Kamil Burak Dermenci, PhD, Senior Researcher, Electrical Engineering and Energy Technology Research Group, VUB—Vrije Universiteit Brussel

8:40 Analysis of Manufacturing Technology Progress of Chinese xEV Batteries in 2024

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

In 2024, Chinese xEV battery manufacturing technology developed special battery production technologies for solid-state batteries, new materials, and fast-charging batteries for the targets of reducing costs and energy consumption. Solid-state battery production has gradually derived from thermal composite and *in situ* solidification, as well as active-material composite solid-state electrolyte technologies. Fast-charging batteries put more effort to lamination accuracy, speed, and multi-tab design. This report will briefly analyze the latest developments.

9:00 Critical Insights for Various Stakeholders into the Battery Industry's Carbon Emissions and Sustainability Challenges

Soad Chambazi, Sustainability Analyst, Benchmark Mineral Intelligence

In light of recent and upcoming regulations, the presentation will address sustainability challenges across the battery supply chain. Initial focus will be on mapping a battery's carbon footprint, examining the impact of various cathode and anode chemistries, regions of production, and processing routes of battery materials on the overall cell carbon intensity.

ADVANCES IN CELL MANUFACTURING

9:20 Navigating Challenges and Innovations in Battery Cell Manufacturing

Samantha Bourrioux, PhD, Project Leader, Renault SAS

This presentation will address the key challenges in battery cell manufacturing, including cost reduction, environmental impact, product quality, and overall process improvement. We will highlight the most complex and attention-demanding process steps, and discuss current and future trends in process innovations, from electrode-making to cell-finishing steps.

9:40 MODERATED Q&A: Session Wrap-Up

Moderator: Kamil Burak Dermenci, PhD, Senior Researcher, Electrical Engineering and Energy Technology Research Group, VUB—Vrije Universiteit Brussel

Panelists:

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

Soad Chambazi, Sustainability Analyst, Benchmark Mineral Intelligence

Samantha Bourrioux, PhD, Project Leader, Renault SAS

10:00 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)

11:00 Introduction of the Beff Platform: Comprehensive Support from Cell Development to Production

Shunsuke Amagai, Founder & Co-CEO, Beff

Since our company's inception, we have collaborated with cell manufacturers and automotive OEMs to address numerous development and production challenges related to cells. Leveraging the expertise of our engineers who have extensive experience in the lithium-ion battery field, we offer comprehensive solutions from cell design to mass production. In this presentation, we will showcase the development methodologies using the Beff Platform, complemented by real-world examples.

11:20 Optimising Battery Manufacturing Processes with the Assistance of Physics-Aware Artificial Intelligence

Alejandro Franco, PhD, Professor, Reactivity & Chemistry of Solids Lab, University of Picardie Jules Verne

In this lecture I will share our latest research works on battery manufacturing digitalisation. I will present a combination of deep learning and physics-based numerical models allowing optimisation of the manufacturing process of lithium-ion, sodium-ion, and solid-state battery electrodes and cells. This combination provides fast prediction capabilities of the manufacturing/properties linkages along with physical insights into the processing of electrodes and cells.

11:40 Sponsored Presentation (Opportunity Available)

12:00 MODERATED Q&A: Session Wrap-Up

Moderator: Kamil Burak Dermenci, PhD, Senior Researcher, Electrical Engineering and Energy Technology Research Group, VUB—Vrije Universiteit Brussel

Panelists:

Shunsuke Amagai, Founder & Co-CEO, Beff

Alejandro Franco, PhD, Professor, Reactivity & Chemistry of Solids Lab, University of Picardie Jules Verne

12:20 Networking Luncheon (Sponsorship Opportunity Available)

13:15 Dessert Break in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)

ADVANCES IN CELL MANUFACTURING

13:45 Chairperson's Remarks

Alejandro Franco, PhD, Professor, Reactivity & Chemistry of Solids Lab, University of Picardie Jules Verne

13:50 Model-Based Assessment of the Electrolyte Wetting Process: A Study Combining Process- and Cell-Simulations

Jochen Zausch, PhD, Senior Scientist, Team-Leader Electrochemistry and Batteries, Flow and Material Simulation, Fraunhofer ITWM

To improve specific steps of cell production, we propose to complement experimental methods with physical simulation models. Here, we will discuss a model for the simulation of the time-consuming electrolyte wetting process. We will discuss how the wetting time is predicted, touch on the issue of model parameterisation, and show how it can be coupled to electrochemical simulations. Establishing this link helps in the interpretation of characterisation experiments.

14:10 Optimising Battery Materials

Keri Goodwin, PhD, Chief Technologist, Formulation, CPI

CPI supports partners in the battery-materials and cell-technology areas to accelerate the translation of their innovations from lab- to commercial-scale. We undertake materials scale-up, automated formulation, coating, and characterisation, alongside extensive know-how in process chemistry and engineering. Here we present case studies demonstrating our work in this field with examples of materials, slurry, and cell development. Use of our materials scale-up facility (AMBIC) will also be detailed.



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HIGH-PERFORMANCE BATTERY MANUFACTURING

Global Production of Safe, Efficient, Higher Energy Density Batteries

14:30 Rethinking Battery Modules for Battery Life Extension

Javier Zurbitu, PhD, CTO, BATTBELT

Turning the pressure control into a new standard for battery management systems, BATTBELT technology aims to extend the life of batteries, developing new products from the mechanical management point of view, without compromising either their energy density or their cost, thanks to a new and revolutionary compression system for batteries. This allows warranty period extension by reducing replacements, mitigates the range reduction, and allows higher C-rates without lifespan reduction.

14:50 MODERATED Q&A: Session Wrap-Up

Moderator: Alejandro Franco, PhD, Professor, Reactivity & Chemistry of Solids Lab, University of Picardie Jules Verne

Panelists:

Jochen Zausch, PhD, Senior Scientist, Team-Leader Electrochemistry and Batteries, Flow and Material Simulation, Fraunhofer ITWM
Keri Goodwin, PhD, Chief Technologist, Formulation, CPI
Javier Zurbitu, PhD, CTO, BATTBELT

15:10 Refreshment Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

15:40 Boosting Europe's Battery-Cell Industrial Manufacturing by Developing an Optimised Machinery with Intelligent Control Processes

Kamil Burak Dermenci, PhD, Senior Researcher, Electrical Engineering and Energy Technology Research Group, VUB—Vrije Universiteit Brussel

BATMACHINE project is a Horizon Europe-funded project that aims to boost Europe's sustainable industrial battery-cell manufacturing value chain by developing an optimised machinery with intelligent control processes to minimise costs, waste, and energy consumption. The core vision of BATMACHINE is to improve and strengthen EU battery cell industrial production by developing new manufacturing machines that minimise energy required for production and increase efficiency rates.

16:00 AMB Powder-to-Electrode Dry Manufacturing Technology

Christopher Mohajer, Director, AM Batteries

The global acceleration towards sustainable energy calls for manufacturing innovations that produce high-performance batteries at low cost while eliminating carbon emissions. AM Batteries' Powder-to-Electrode technology delivers superior electrode performance through a streamlined three-step process: dry mixing, dry deposition, and mechanical compression. In this symposium, we will highlight how our dry manufacturing technology demonstrates significant performance advantages over other electrode production methods.

16:20 Revolutionary Innovations in Ultra-High-Power Cells by MoliceL

Nan Hong Lester Yeh, R&D Mgr, Advanced Battery Technologies, MoliceL

Nan-Hung, Yeh (Ph.D.) is a manager of R&D and chief cell designer at E-one Moli Energy. His work focuses specifically on the high-performance LIBs design, performance shaping and manufacturing process development, which includes high energy density cathode material research, electrode design/engineering, interface design/ engineering, heat/ thermal study, and synchrotron radiation in-situ electrochemical analysis. His recent R&D works and projects are main interests: ultra-fast charge interface, extreme high-power battery accomplishment and advanced LIBs material application. He will present MoliceL's revolutionary innovations in Ultra-High-Power Cells, demonstrating how MoliceL's unique interfacing technology is leading the breakthrough of performance and safety to next level. And how our new generation LIB cells empower the applications in AI data center BBUs, premium EVs, racing sports cars, eVTOLs, two-wheeled motorcycle, and heavy-lift drones.



16:40 MODERATED Q&A: Session Wrap-Up

Moderator: Alejandro Franco, PhD, Professor, Reactivity & Chemistry of Solids Lab, University of Picardie Jules Verne

Panelists:

Kamil Burak Dermenci, PhD, Senior Researcher, Electrical Engineering and Energy Technology Research Group, VUB—Vrije Universiteit Brussel
Christopher Mohajer, Director, AM Batteries
Nan Hong Lester Yeh, R&D Mgr, Advanced Battery Technologies, MoliceL

17:00 Networking Reception in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

18:00 Close of Day

WEDNESDAY 25 JUNE

7:15 Registration Open and Morning Coffee

7:30 Interactive Breakout Discussions

Interactive Breakout Discussions are informal, moderated discussions with brainstorming and interactive problem-solving, allowing participants from diverse backgrounds to exchange ideas and experiences and develop future collaborations around a focused topic.

TABLE 1: The Interdependence of BESS and EV Charging Infrastructure

Moderator: Chloe Herrera, Energy Storage Analyst, Lux Research

TABLE 2: Li-ion NMC Fast Charging New Cells for E-Mobility

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

TABLE 3: Silicon Anodes and Cells

Moderator: Benjamin Park, PhD, Founder & CTO, Enevate Corp.

TABLE 4: Innovations in Recycling Battery Materials & Second Life

Moderator: Steve Sloop, PhD, President, OnTo Technology LLC

TABLE 5: How Can Europe Compete? Developing a Secure & Green Battery Supply Chain

Moderator: Tom Van Bellinghen, Founder, Lithink

TABLE 6: Battery Modelling

Moderator: Michael Schoenleber, Co-Founder & CTO, Batemo GmbH

TABLE 7: Solid-State Batteries

Moderator: Venkataraman Thangadurai, PhD, Chair in Energy & Faraday Institution; Adjunct Professor, School of Chemistry, University of St. Andrews

TABLE 8: European Battery Market

Moderator: Ines Miller, Team Lead Battery Cells, E Mobility, P3 Automotive GmbH

TABLE 9: Battery AI & Machine Learning

Moderator: Tal Sholkapper, PhD, CEO & Co-Founder, Voltaiq, Inc.

TABLE 10: Battery Pack System Cost and Safety – Will Future xEV Battery Packs Increase in Complexity or Simplify and How Will Cost and Safety Be Impacted?

Moderator: Kevin Konecky, Vice President, Battery Systems Engineering, Ola Electric

8:25 Organizer's Remarks

Craig Wohlers, General Manager, Cambridge EnerTech

ADVANCES IN CELL MANUFACTURING

8:30 Chairperson's Remarks

Keri Goodwin, PhD, Chief Technologist, Formulation, CPI

8:35 Analytical Solutions for Impurity Control in Battery Manufacturing

Zhao Liu, Senior Manager Market Development, Clean Energy, Thermo Fisher Scientific

Effective impurity control in battery manufacturing is essential for ensuring optimal performance, safety, and longevity of batteries. This presentation will explore analytical solutions designed to identify, quantify, and mitigate impurities throughout the battery manufacturing process, from the quality control of incoming raw materials to inline process quality control. By employing advanced characterisation techniques, such as electron microscopy, spectroscopy, and mass spectrometry, we share a comprehensive approach to analyse contaminants including metal ions, organic residues, and particulate





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impurities. These methodologies ultimately enhance the reliability and performance of battery materials and manufacturing processes.

8:55 Beyond Uniaxial Compression: How DRYtraec is Transforming Dry Battery Electrode Technology

Arthur Dupuy, PhD, Research Associate, Fraunhofer IWS

DRYtraec process revolutionises dry electrode manufacturing by overcoming key limitations of Maxwell-type processes. Using speed roll differentials to induce precise shear forces, DRYtraec achieves thin, uniform electrodes in a single pass, reducing material waste and degradation. In contrast, Maxwell-type processes, relying on uniaxial compression, often require multiple calendaring cycles, hindering scalability. DRYtraec's ability to enhance electrode quality and performance will then be shown for sustainable lithium-ion and solid-state batteries.

9:15 Progress in Scaled-Up Manufacturing of High-Energy-Density, Low-Cost, Solid-State Li-ion Batteries: From Semi-Solid State to All-Solid State

Tim Lin, PhD, CTO and Founder, Solid Energies

Despite promising potentials offered, all-solid-state batteries (ASSB) need to address several technical/commercial challenges before their mass production can be achieved. Recently, semi-solid-state batteries (SSSB), as a type of intermediate-state battery, have been rapidly developed for commercialisation. This talk will discuss (1) feasible approach for a cost-effective adoption of today's Li-ion battery technology for commercial manufacturing of SSSB, and (2) challenges and potentially enabling paths for ASSB geared toward scaled-up manufacturing.

SCALING BATTERY MANUFACTURING

9:35 Secure Twinning for the Upcoming EV Battery Regulations with Digital Battery Passport Solution

Wenzel Prochazka, PhD, Senior Product Manager, Electrification Systems, NXP Semiconductors Austria

In order to securely "twin" a real battery with its cloud-based virtual twin, one needs to use tags or unique markings in transporting goods and parts for batteries, implement unique IDs in cells and modules, secure storage on a battery level, and have communication methods that respect CRA and GDPR together with the DPP and EU battery regulation.

9:55 Presentation to be Announced



10:15 MODERATED Q&A: Session Wrap-Up

Moderator: Keri Goodwin, PhD, Chief Technologist, Formulation, CPI

Panelists:

Zhao Liu, Senior Manager Market Development, Clean Energy, Thermo Fisher Scientific

Arthur Dupuy, PhD, Research Associate, Fraunhofer IWS

Tim Lin, PhD, CTO and Founder, Solid Energies

Wenzel Prochazka, PhD, Senior Product Manager, Electrification Systems, NXP Semiconductors Austria

Speaker to be Announced, Coperion GmbH

10:35 Coffee Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

11:20 Beyond Trial-and-Error: Generative Engineering & Digital Twins for Scalable Battery Innovation

Katharina Gerber, PhD, Engagement Manager for Battery Industry, Siemens DISW

In today's competitive battery market, innovators need a more advanced strategy than a hands-on trial-and-error development approach. This session introduces the Siemens Xcelerator portfolio—a suite of software tools that leverages generative engineering and digital twins to help battery developers reduce prototyping costs and streamline scale-up. Discover how integrated simulation and data management shorten time-to-market while ensuring consistent quality at every stage—from materials research through full-scale battery production.

11:40 Upscaling of Solid-State Battery Manufacturing

Sam Mousavi, Research Scientist, VTT

One of the biggest challenges with solid-state batteries is to scale up their production, while maintaining high quality. In my presentation, I will show examples of challenges in upscaling of solid-state battery manufacturing from lab- to pilot-scale, and give suggestions on how to get more battery innovations from lab to industry.

12:00 Sponsored Presentation (Opportunity Available)

12:20 MODERATED Q&A: Session Wrap-Up

Moderator: Keri Goodwin, PhD, Chief Technologist, Formulation, CPI

Panelists:

Katharina Gerber, PhD, Engagement Manager for Battery Industry, Siemens DISW

Sam Mousavi, Research Scientist, VTT

12:40 Networking Luncheon (Sponsorship Opportunity Available)

13:30 Dessert Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

14:00 Close of Conference

FEEDBACK FROM PREVIOUS EVENTS

"This conference is really ideal to meet your end customers, who are battery manufacturers, but also the OEMs who use these batteries, and the suppliers who cater to the battery manufacturers are also here"

- Franz Joseph Kruger, PhD, InnoventisConsulting



24-25 JUNE 2025 | MAINZ, GERMANY

xEV BATTERY APPLICATIONS

Applications for the Future Growth of Electric Vehicles Globally
& SAE's Joint Peer-Reviewed Program

MONDAY 23 JUNE

8:00 Registration Open

TUESDAY 24 JUNE

7:30 Registration and Morning Coffee

8:30 Organizer's Remarks

Craig Wohlers, General Manager, Cambridge EnerTech

SAE PEER-REVIEWED R&D FOR xEV APPLICATIONS

8:35 Chairperson's Remarks

Sze-Sze Ng, Principal Technical Service Scientist, Dow

8:40 Sustainable Design of Automotive Batteries

Andreas Braun, Product Area Manager, Battery Systems & Methodology, AVL Deutschland GmbH

Martin Rothbart, Senior Product Manager, Energy & Sustainability, AVL List GmbH

The shift to electrification in the automotive industry increases CO2 emissions during production. Thus, manufacturers must optimise the entire product lifecycle, focusing on battery design, which impacts material selection, manufacturing, use, and recycling. This paper discusses sustainable battery design parameters, quick wins, and their effects on safety, costs, and lifespan. It also explores future eco-design trends and provides guidelines for improving lifecycle CO2 impact and recycling efficiency.

9:00 Impact of Temperature on the Aging of Lithium-ion Batteries: Insights from Capacity Testing for Enhanced Battery Management in Sustainable Transportation Systems

Carlos Mico, PhD, Professor, Universitat Politècnica de València

This study investigates the thermal performance of immersion cooling applied to an Electric Vehicle (EV) battery module comprised of NMC-chemistry-based cylindrical 21700 format lithium-ion cells. These findings enhance our understanding of battery immersion cooling technology and provide novel insights for optimising battery thermal management systems through computational fluid dynamics (CFD).

9:20 Mechanical Testing and Modelling of Lithium-Ion Cells for EV Safety

Huzefa Patanwala, Graduate Research Assistant, Electric Vehicle Safety Lab, Temple University

This study investigates the mechanical response of pouch and prismatic LIB cells under quasi-static and dynamic loading conditions to enhance EV battery safety. A full suite of quasi-static tests was conducted at 0%-SOC, with additional dynamic testing to mimic real world crash scenarios. A finite element model (FEA) was developed to predict cell behavior. The findings provide key insights into how form factor, impact speed, and SOC influence battery behaviour.

9:40 MODERATED Q&A: Session Wrap-Up

Moderator: Sze-Sze Ng, Principal Technical Service Scientist, Dow

Panelists:

Martin Rothbart, Senior Product Manager, Energy & Sustainability, AVL List GmbH

Carlos Mico, PhD, Professor, Universitat Politècnica de València

Huzefa Patanwala, Graduate Research Assistant, Electric Vehicle Safety Lab, Temple University

10:00 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)

MARKET EXPANSION OF xEVs AND THEIR BATTERIES

10:55 Chairperson's Remarks

Michael Harenbrock, PhD, Principal Expert, Engineering Electric Mobility, MANN+HUMMEL GmbH

11:00 KEYNOTE PRESENTATION: The Ultra High-Power Battery for the New 911 Hybrid

Otmar Bitsche, PhD, Director, E-Mobility, Porsche AG

This presentation will include a brief view on the system and the related requirements for the battery pack, the battery itself (Pack design, cooling, etc.) and the cell (Varta v4Drive).

11:20 KEYNOTE PRESENTATION: New Technologies and Cell Chemistries: The Future of the Standardised HV Battery at Volkswagen

Arno Perner, PhD, Battery Cell and Battery System Innovations for Electric Vehicles, Volkswagen AG

Volkswagen AG plans to massively increase the proportion of electric vehicles by 2030. The focus of battery development is on attractive products in the segments Affordable, Range, and Performance. With the help of standardised components, the complexity and diversity of variants in the development, series production, after-sales, and recycling of HV batteries will be minimised.

11:40 Presentation to be Announced

12:00 MODERATED Q&A: Session Wrap-Up

Moderator: Michael Harenbrock, PhD, Principal Expert, Engineering Electric Mobility, MANN+HUMMEL GmbH

Panelists:

Otmar Bitsche, PhD, Director, E-Mobility, Porsche AG

Arno Perner, PhD, Battery Cell and Battery System Innovations for Electric Vehicles, Volkswagen AG

12:20 Networking Luncheon (Sponsorship Opportunity Available)

13:15 Dessert Break in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)

MARKET EXPANSION OF xEVs AND THEIR BATTERIES

13:45 Chairperson's Remarks

Arnold Lamm, PhD, Founder & Executive Director, E-Mobility, e-Technologies GmbH

13:50 Update on Mercedes Battery Portfolio and Technology

Tobias Handschuh, PhD, Senior Manager, Mercedes Benz AG

This update highlights advancements in Mercedes-Benz's battery portfolio and technology, including innovations in battery chemistry, design, and sustainability. Emphasis is placed on improving performance, efficiency, and lifecycle management to meet the demands of next generation electric vehicles. These developments reflect Mercedes-Benz's commitment to cutting-edge energy solutions and the future of sustainable mobility.

14:10 Smart Battery Design for Trucks: Adapting to Use Cases and Conditions

Kristina Pfeifer, PhD, R&D Engineer, Product Engineering, Daimler Truck AG

Electric trucks require batteries designed to meet diverse operational needs, from long-haul journeys to urban deliveries, influenced by various factors. This talk explores how to optimise battery systems by adapting them to specific use cases, external conditions, and customer requirements. Key topics include battery sizing, energy efficiency, and thermal management, along





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xEV BATTERY APPLICATIONS

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with strategies for developing robust, durable solutions that meet the unique demands of modern trucking.

14:30 From Chemistry to Commercialisation: Developing Battery Cell Specifications for EVs

Maithri Venkat, Manager—Battery Cell Lifetime and Parameterization, Lucid Motors, Inc.

Defining battery cell specifications for electric vehicles requires balancing performance, safety, and cost targets. This presentation examines key parameters, including energy density, cycle life, and fast-charging capabilities, alongside considerations for thermal management and manufacturability. Focus will be given to aligning cell chemistry advancements with vehicle design requirements and supply chain realities, ensuring robust specifications that enable innovation and scalability in the EV market.

14:50 MODERATED Q&A: Session Wrap-Up

Moderator: Arnold Lamm, PhD, Founder & Executive Director, E-Mobility, e-Technologies GmbH

Panelists:

Tobias Handschuh, PhD, Senior Manager, Mercedes Benz AG

Kristina Pfeifer, PhD, R&D Engineer, Product Engineering, Daimler Truck AG

Maithri Venkat, Manager—Battery Cell Lifetime and Parameterization, Lucid Motors, Inc.

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

15:40 Still Water Runs Deep: Current Commercialisation Status of Sodium-ion Batteries

Kevin Shang, Senior Research Analyst, Battery and Energy Storage Technology and Supply Chain, Wood Mackenzie

Sodium-ion batteries (SIB) are one of the most promising "beyond-lithium" energy storage technologies. In 2022, record lithium prices catalysed a surge of interest in SIB. Since 2023, falling lithium prices have delayed the ambitions of many battery companies to bring SIB to the mass market. However, the R&D and commercialisation of SIB is still moving fast. This presentation will help you understand the current commercialisation status of SIB.

16:00 Are European OEMs on Track to Meet Their 2025 CO2 Targets?

Iola Hughes, Research Manager, Rho Motion

This session will cover the dynamics and latest trends of the EV market, both from the global context and a deeper dive into Europe. New CO2 emission standards in 2025 mean it is set to be a testing year for OEMs; the talk will explore who is on track and where work is needed. EV cost parity and the latest regional battery trends will also be discussed.

16:20 Presentation to be Announced

16:40 MODERATED Q&A: Session Wrap-Up

Moderator: Arnold Lamm, PhD, Founder & Executive Director, E-Mobility, e-Technologies GmbH

Panelists:

Kevin Shang, Senior Research Analyst, Battery and Energy Storage Technology and Supply Chain, Wood Mackenzie

Iola Hughes, Research Manager, Rho Motion

17:00 Networking Reception in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)

18:00 Close of Day

WEDNESDAY 25 JUNE

7:15 Registration Open and Morning Coffee

7:30 Interactive Breakout Discussions

Interactive Breakout Discussions are informal, moderated discussions with brainstorming and interactive problem-solving, allowing participants from

diverse backgrounds to exchange ideas and experiences and develop future collaborations around a focused topic.

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Moderator: Kevin Konecky, Vice President, Battery Systems Engineering, Ola Electric

8:25 Organizer's Remarks

Craig Wohlers, General Manager, Cambridge EnerTech

xEV BATTERY TECHNOLOGY

8:30 Chairperson's Remarks

Maithri Venkat, Manager—Battery Cell Lifetime and Parameterization, Lucid Motors, Inc.

8:35 Sponsored Presentation (Opportunity Available)

8:55 Advanced Robust Battery Designs with Focus on Safety

Arnold Lamm, PhD, Founder & Executive Director, E-Mobility, e-Technologies GmbH

Volumetric energy densities of LiBs have almost doubled in the last 10 years, which is due in particular to the increase of the nickel content in cell chemistry. However, a particular challenge now is the achievement of a safe state with regard to the suppression of TP in the abuse case. This presentation will introduce design solutions as well as newly developed components, such as cell barriers or potting solutions.

9:15 Road to 1000 Miles Per Charge—24M Innovative and Proprietary Process and Product Design Platforms

Speaker to be Announced, 24M Technologies Inc



9:35 R5 Electric: Some Highlights on V2G From Cell Point of View

Pierre Tran-Van, PhD, Scientist, Renault SAS

The R5 Electric was launched last fall, featuring a pack architecture with big modules and mid-nickel/graphite pouch cells. Bidirectional charger allows the use of vehicle-to-grid application. This presentation will revolve on the assessment of V2G impact on cell durability.

9:55 New Styrene-butadiene Rubber (SBR) Binders for Anode to Improve Fast Charging Performance and Energy Density

Stella Deheryan, Application Manager, ENEOS Materials Europe Belgium BV
ENEOS Materials Corporation is a manufacturer of binder materials for lithium ion battery and has a large variety of binder products for anode, cathode and solid state battery. Currently, the improvements of fast charging performance and high energy density are drawing strong attention for the market expansion





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of electric vehicles. This presentation will show anode binder products for these technical demands and the improvement mechanism from the aspects of the binder and electrode properties.

10:15 MODERATED Q&A: Session Wrap-Up

Moderator: Maithri Venkat, Manager—Battery Cell Lifetime and Parameterization, Lucid Motors, Inc.

Panelists:

Arnold Lamm, PhD, Founder & Executive Director, E-Mobility, e-Technologies GmbH

Pierre Tran-Van, PhD, Scientist, Renault SAS

Speaker to be Announced, 24M Technologies Inc

10:35 Coffee Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

EUROPEAN REGULATORY LANDSCAPE

11:20 Performance, Durability, and Safety in Batteries Regulation

Andreas Pfrang, Scientific Officer, Joint Research Center, European Commission

The Batteries Regulation aims at limiting EU sales to sufficiently sustainable batteries. For this purpose, the regulation covers the entire battery life cycle, from the extraction of raw materials over industrial production, second-life, and/or recycling to disposal. The European Commission's Joint Research Centre supports the development of the related requirements or test procedures scientifically. This presentation will focus on performance, durability, and safety requirements from a technical point of view.

RECRUITING AND DEVELOPING TOP TALENT

11:40 Battery Talent Trends, Solutions, and Development

Matt Anders, Vice President, Batteries & Future Mobility, Pangea Talent Solutions

As the battery industry continues to expand, who you hire into your organization is a critical component of your success. In what seems like an increasingly competitive industry—and talent still in short supply—how can you stand out? We will provide insight to help promote a positive company reputation, efficient talent acquisition practices, and other solutions to help secure the talent you are looking for.

12:00 Sponsored Presentation *(Opportunity Available)*

12:20 MODERATED Q&A: Session Wrap-Up

Moderator: Maithri Venkat, Manager—Battery Cell Lifetime and Parameterization, Lucid Motors, Inc.

Panelists:

Andreas Pfrang, Scientific Officer, Joint Research Center, European Commission

Matt Anders, Vice President, Batteries & Future Mobility, Pangea Talent Solutions

12:40 Networking Luncheon *(Sponsorship Opportunity Available)*

13:30 Dessert Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

14:00 Close of Conference



25-26 JUNE 2025 | MAINZ, GERMANY

LITHIUM BATTERY CHEMISTRY — PART 2

Advancements in Lithium-ion and Beyond

WEDNESDAY 25 JUNE

11:30 Registration Open

12:40 Networking Luncheon (*Sponsorship Opportunity Available*)

13:30 Dessert Break in the Exhibit Hall with Poster Viewing
(*Sponsorship Opportunity Available*)

14:00 Organizer's Remarks

Victoria Mosolgo, Conference Producer, Cambridge EnerTech

EUROPE'S BATTERY FUTURE AND SECURING SUPPLY CHAIN

14:05 Chairperson's Remarks

Martin Winter, PhD, Director & Professor, Electrochemical Energy Technology, University of Muenster

14:10 Localised Battery Value Chains in Europe—How Can Europe Compete under Chinese Domination in the Battery Industry?

Ines Miller, Team Lead Battery Cells, E Mobility, P3 Automotive GmbH

This presentation examines why emerging Western manufacturers are facing such challenges during their cell ramp-up and production, while Asian competitors, particularly from China, steadily advance. It further elaborates the relevance of switching to next-gen production technologies in this highly competitive industry and how it might impact production processes, ramp-ups and production excellence.

14:30 Li-Free Anode Battery Development and Scaling at QuantumScape

Daniel Braithwaite, Senior Director II, Cell Engineering, QuantumScape

Today's conventional lithium-ion batteries fall short of meeting the needs of many automotive, consumer electronics, and stationary storage applications. Many believe that the unique cell design of solid-state lithium-metal batteries will help bridge this gap—particularly when it comes to electric vehicles—because the technology is designed to enable longer range, faster charging, and enhanced safety compared to conventional lithium-ion batteries.

14:50 Securing the European Battery Supply-Chain via 100% Silicon Anodes to Enable Commercialisation of High-Performance Li-ion Cells

Rob Anstey, CEO and Founder, GDI Inc.



15:10 MODERATED Q&A: Session Wrap-Up

Moderator: Martin Winter, PhD, Director & Professor, Electrochemical Energy Technology, University of Muenster

Panelists:

Ines Miller, Team Lead Battery Cells, E Mobility, P3 Automotive GmbH

Daniel Braithwaite, Senior Director II, Cell Engineering, QuantumScape

Rob Anstey, CEO and Founder, GDI Inc.

15:30 Refreshment Break in the Exhibit Hall with Poster Viewing
(*Sponsorship Opportunity Available*)

16:00 Sodium-Ion

Daniel Friebel, Director, Research and Development, Natron Energy Inc.

This presentation introduces the leading classes of sodium-ion cells and compares their materials platforms and device performance to one another and to incumbent lithium-ion technologies. The major opportunities for performance and cost improvements—as well as the challenges and limitations on the technologies—will also be addressed. This presentation will conclude with an analysis of the relevant markets for each class of sodium-ion cells.

16:20 Development of Sustainable Electrolytes for Lithium-ion and Sodium-ion Batteries

Andrea Balducci, PhD, Professor Applied Electrochemistry, Center for Energy & Environmental Chemistry, Friedrich Schiller University Jena

The development of electrolytes displaying good transport properties, high thermal stability, low flammability, and high safety is of crucial importance for the realisation of lithium-ion and sodium-ion batteries. In this work we report about a series of novel bio-derived electrolytes, based on the solvents Tetraethoxyglyoxal (TEG) and γ -valerolactone (GVL), which have been developed with the aim to match above mentioned characteristics, together with a high sustainability and a low price.

16:40 Electrochemical Sensing

Robert Dominko, PhD, Lab Head, Materials Chemistry, National Institute of Chemistry

17:00 MODERATED Q&A: Session Wrap-Up

Moderator: Martin Winter, PhD, Director & Professor, Electrochemical Energy Technology, University of Muenster

Panelists:

Daniel Friebel, Director, Research and Development, Natron Energy Inc.

Andrea Balducci, PhD, Professor Applied Electrochemistry, Center for Energy & Environmental Chemistry, Friedrich Schiller University Jena

Robert Dominko, PhD, Lab Head, Materials Chemistry, National Institute of Chemistry

17:20 Networking Reception in the Exhibit Hall with Poster Viewing
(*Sponsorship Opportunity Available*)

18:10 Close of Day

THURSDAY 26 JUNE

8:00 Registration Open and Morning Coffee

8:25 Organizer's Remarks

Victoria Mosolgo, Conference Producer, Cambridge EnerTech

SILICON ANODE

8:30 Chairperson's Remarks

Ines Miller, Team Lead Battery Cells, E Mobility, P3 Automotive GmbH

8:35 Breakthrough Silicon Anode Technology: Ready for Market, Built for Scale

Ronnie Tao, Vice President, Business Development, Sales & Marketing, Amprius Technologies



8:55 Umicore's Silicon Anode Material—How to Answer the Key Requirements from Electric Vehicle Manufacturers?

Jean-Sébastien Bridel, Senior Scientist, Research & Development, Umicore

After 15 years of R&D, Umicore introduces its silicon carbon composite (Si/C) anode portfolio. Today, and after extensive testing at large-scale, our customers confirm that Umicore Si/C technology is the right answer to meet their key requirements for next-generation EV batteries: performance, cost, scalability, ESG, and IP.

9:15 The Key to Maximum Silicon Anode Performance

Manuel Wieser, CTO, AnteoTech Ltd.

Binders and additives, though a small part of anode compositions, play a crucial role in achieving a long cycle life. This is especially vital for silicon-containing anodes, where materials like SiO_x, Si/C, or Si are employed to enhance storage capacity. Evolving binder chemistries and innovative structural additives, such as Anteo X, aim to minimise inactive materials, pushing silicon anodes forward with significant cycle improvements.



25-26 JUNE 2025 | MAINZ, GERMANY

LITHIUM BATTERY CHEMISTRY — PART 2

Advancements in Lithium-ion and Beyond

9:35 Advanced Imaging of Degradation Mechanisms in Si-based Li-ion Batteries

Roland Brunner, PhD, Group Leader & Deputy Head, Microelectronics, Materials Center, Leoben Research GmbH

Understanding degradation mechanisms in Si-based Li-ion batteries is critical for improving performance and longevity. This work leverages advanced imaging techniques to reveal structural and chemical changes during cycling, providing insights for enhancing battery design and stability.

9:55 MODERATED Q&A: Session Wrap-Up

Moderator: Ines Miller, Team Lead Battery Cells, E Mobility, P3 Automotive GmbH

Panelists:

Jean-Sébastien Bridel, Senior Scientist, Research & Development, Umicore

Manuel Wieser, CTO, AnteoTech Ltd.

Roland Brunner, PhD, Group Leader & Deputy Head, Microelectronics, Materials Center, Leoben Research GmbH

10:15 Coffee Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

10:50 Enhanced Battery Safety and Cycle Life Enabled by New Separators

John Zhang, PhD, CTO/CSO, Polypore International

This study demonstrates the development of novel battery separators designed to enhance thermal stability, improve electrolyte compatibility, and mitigate dendrite formation. These advancements significantly extend battery cycle life and improve safety under high-stress conditions, making them promising for next-generation energy storage applications.

11:10 Li Metal Anode Innovation at Scale

Marina Yakovleva, Director, R&D and New Business Development, Rio Tinto

Lithium metal anodes offer exceptional energy density but face challenges such as dendrite growth and instability. This work explores scalable innovations to overcome these barriers, enabling safer, high-performance batteries for broad commercialisation.

11:30 Tunnel Kiln Calcination Saggars for a Resilient, Competitive and Circular European Cathode Active Material (CAM) Supply Chain

Inigo Anza, Global Technology Director, Technology & Product Development, Morgan Advanced Materials - Molten Metal Systems

A fundamental concern that cathode active materials (CAM) manufacturers have is how to achieve and retain operational excellence (OPEX) in their calcination tunnel kilns. Morgan Advanced Materials pioneers first ever western-made, long lasting, recyclable, lightweight and energy efficient saggars for CAM manufacturing. Made with proprietary recipes, these saggars will become your best OPEX partner including reduced cost of ownership, decreased inventories, zero waste and supply chain resilience.



11:50 MODERATED Q&A: Session Wrap-Up

Moderator: Martin Winter, PhD, Director & Professor, Electrochemical Energy Technology, University of Muenster

Panelists:

John Zhang, PhD, CTO/CSO, Polypore International

Marina Yakovleva, Director, R&D and New Business Development, Rio Tinto

12:10 Networking Luncheon *(Sponsorship Opportunity Available)*

12:50 Dessert Break in the Exhibit Hall with Last Chance for Poster Viewing *(Sponsorship Opportunity Available)*

LITHIUM SULFUR

13:20 Chairperson's Remarks

Martin Winter, PhD, Director & Professor, Electrochemical Energy Technology, University of Muenster

13:25 Lithium Sulfur—A Different Approach

Michael Liedtke, Chief Commercial Officer, Zeta Energy

Past Lithium-Sulfur (LiS) chemistry showed early promise but failed to overcome a key problem shortening the lifetime of the battery system. Finding a way to chemically bond the sulfur in such a way that the creation of polysulfides is limited is the way forward. The reward is a low-cost battery attractive to many applications. Using lowest cost sulfur from refineries, a waste by-product, leads to lowest carbon footprint batteries.

13:45 Lithium Metal Host Anode-Enabled High-Energy Density Monolithic LiS Batteries: A Game-Changer for Air and Land Mobility

Aamir I. Waidha, PhD, Principal Battery Scientist, R&D, Theion GmbH

This talk discusses lithium metal host anode-enabled monolithic LiS batteries and their transformative potential for air and land mobility. It highlights breakthroughs in high-energy density designs and their implications for the future of transportation.

14:05 Making Pressure Irrelevant in Fully Dry Silicon Solid-State Batteries

Kevin Wujcik, PhD, CTO, R&D, Blue Current Inc.

Blue Current introduces its pioneering work on fully dry solid-state batteries featuring silicon-based anodes and flexible composite electrolytes. The presentation will provide a detailed exploration of Blue Current's pouch cell performance capabilities, focusing specifically on low-pressure operation that is key for the commercialisation of fully dry cells. We will also highlight aspects of the innovative process implemented at the company's 1-2 MWh pilot facility in Hayward.

14:25 Sponsored Presentation *(Opportunity Available)*

14:45 MODERATED Q&A: Session Wrap-Up

Moderator: Martin Winter, PhD, Director & Professor, Electrochemical Energy Technology, University of Muenster

Panelists:

Michael Liedtke, Chief Commercial Officer, Zeta Energy

Aamir I. Waidha, PhD, Principal Battery Scientist, R&D, Theion GmbH

Kevin Wujcik, PhD, CTO, R&D, Blue Current Inc.

15:05 Session Break

CLOSING PLENARY PANEL DISCUSSION

15:15 Roadmap to 2040: Opportunities & Illusions



Moderator: Arnold Lamm, PhD, Founder & Executive Director, E-Mobility, e-Technologies GmbH

As the world transitions to electrification, many challenges and market corrections lay ahead. This panel of experts will discuss forecasts for 2040, providing insights about opportunities, challenges, barriers, and key factors shaping the 2040 roadmap and where the industry is going in the near term.

Panelists:

Peter Lamp, PhD, Senior Strategic Advisor, Scires Battery Technologies GmbH'

Markus Hackmann, Managing Director, E Mobility, P3 Automotive GmbH

Anne Oxley, Founder & CTO, Brazilian Nickel

Joern Neuhausen, PhD, Director, PwC Strategy

16:15 Close of Conference



25-26 JUNE 2025 | MAINZ, GERMANY

xEV BATTERY TECHNOLOGY AND MARKET

Driving the Future Growth of Electric Vehicles Globally

WEDNESDAY 25 JUNE

11:30 Registration Open

12:40 Networking Luncheon (Sponsorship Opportunity Available)

13:30 Dessert Break in the Exhibit Hall with Poster Viewing (Sponsorship Opportunity Available)

14:00 Organizer's Remarks

Craig Wohlers, General Manager, Cambridge EnerTech

MARKET EXPANSION OF xEVs AND THEIR BATTERIES

14:05 Chairperson's Remarks

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

14:10 FEATURED PRESENTATION: Perspectives and Challenges of Next-Gen Automotive Batteries

Edwin Knobbe, PhD, Technical Project Manager, Battery Cell Competence Centre, BMW

To reduce fleet emissions and to achieve ambitious strategic goals for CO2 emission reduction the BMW Group sees the electrification of its model range as a central component of its product strategy. This presentation will explore the perspectives and challenges associated with the development of next-generation automotive batteries.

14:30 Power Batteries—A Bridging Strategy towards Fully Electrified Vehicles

Horst Mettlach, Global Tech Specialist Traction Batteries, Stellantis

To reduce climate change, legal boundary conditions worldwide require a drastic reduction in CO₂ vehicle emissions. A flexible strategy with (m)HEVs, PHEVs, and FCEVs will allow the customers to adapt to fully electrified vehicles. The unique requirements for power batteries mHEV, HEV, FCEV, and the synergies among the different applications will be described in this talk. The battery development will be presented as well as the integration in Stellantis vehicles.

14:50 Immersion Cooling: Why, How and What For? A Demonstration Using TotalEnergies Fluid Solutions

Gerard Quoirin, Battery specialist, TotalEnergies Lubrificants S.A.

Immersion cooling of lithium batteries is now seen as a major advance in meeting the challenges of new-generation batteries: fast charging, high energy density, improved safety and enhanced durability. While the benefits of the immersion cooling method are no longer disputed, its implementation remains complex and requires new development methods. Using a number of concrete examples, from the PHEV to the EV, right through to the Battery Swapping concept, we will see how TotalEnergies fluids can respond to the different applications of immersed batteries.



15:10 MODERATED Q&A: Session Wrap-Up

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

Panelists:

Edwin Knobbe, PhD, Technical Project Manager, Battery Cell Competence Centre, BMW

Horst Mettlach, Global Tech Specialist Traction Batteries, Stellantis

Gerard Quoirin, Battery specialist, TotalEnergies Lubrificants S.A.

15:30 Refreshment Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

16:00 Battery Technology Roadmaps: Unravelling the Current Landscape and Confronting Challenges for Solid-State Batteries

Varnika Agarwal, Research Analyst, Rho Motion

This session will examine solid-state technology, discussing and comparing different classifications. It will consider the potential benefits and challenges

of solid-state commercialisation and the market impact with a forward-looking forecast. As well as examining the current players and their progress within this developing technology.

16:20 Impacts of the EU Batteries Regulation on the Development of the Battery Eco-System in Europe

Giorgio Corbetta, Director, EU Affairs, EUROBAT

Batteries are a cornerstone to become carbon neutral by 2050. The EU Institutions have been negotiating the legislation that will regulate the whole life cycle of a battery. They finally have agreed to ambitious targets and tight timelines for the collection of batteries, material recovery, and recycling efficiencies that will impact the industry. This proposal, hence, is based on the outcome of the Batteries Regulation legislative process.

16:40 Québec: Europe's Raw Battery Material Partner in North America

Nikolaus Hottenroth, Attaché Économie et Innovation, Délégation générale du Québec à Munich

Québec was the first jurisdiction in Canada to publish a critical and strategic mineral plan in 2020 to accompany a battery strategy dedicated to converting minerals to raw battery materials. This presentation will highlight how Québec has launched into its position, and where and how we intend to continue tying into our alliances with cross-Atlantic partnerships.

17:00 MODERATED Q&A: Session Wrap-Up

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

Panelists:

Varnika Agarwal, Research Analyst, Rho Motion

Giorgio Corbetta, Director, EU Affairs, EUROBAT

Nikolaus Hottenroth, Attaché Économie et Innovation, Délégation générale du Québec à Munich

17:20 Networking Reception in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

18:10 Close of Day

THURSDAY 26 JUNE

8:00 Registration Open and Morning Coffee

8:25 Organizer's Remarks

Craig Wohlers, General Manager, Cambridge EnerTech

xEV BATTERY TECHNOLOGY

8:30 Chairperson's Remarks

Kevin Konecky, Vice President, Battery Systems Engineering, Ola Electric

8:35 Sponsored Presentation (Opportunity Available)

8:55 Enevate Advanced Cell Technologies—Charging ahead in Battery Innovation

Benjamin Park, PhD, Founder & CTO, Enevate Corp.

In the evolving landscape of energy storage, silicon-cell technology is at the forefront of innovation and potential. This talk will explore work done at Enevate showing benefits of Enevate's unique silicon cells, highlighting their versatility, exceptional performance, and commercial viability. As the demand for efficient and sustainable energy solutions intensifies, Enevate's cells are leading the way in the drive for next-generation energy storage solutions.

9:15 Optimising Performance of LMFP/NMC Blends

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

This presentation shows a systematic evaluation of NMC and LMP blends with the aim of mapping the blend/performance space. The focus will be on performance metrics for high-energy cells with power performance sufficient for auto applications.



25-26 JUNE 2025 | MAINZ, GERMANY

xEV BATTERY TECHNOLOGY AND MARKET

Driving the Future Growth of Electric Vehicles Globally

9:35 Battery Management Systems for SW Defined Vehicles

Stefan Goede, CTO, Co-Founder, Munich Electrification GmbH

In light of rapidly growing market expansion of EVs, supply chains for battery packs and BMS are diverse: some OEMs design BMS in-house, others are outsourcing BMS development to Tier 1 suppliers or pack integrators. Managing SW interface complexity and enabling quick development cycles while having multi-sourcing options for BMS are valuable advantages. This talk presents innovative BMS software concepts for software-defined vehicles.

9:55 MODERATED Q&A: Session Wrap-Up

Moderator: Kevin Konecky, Vice President, Battery Systems Engineering, Ola Electric Panelists:

Benjamin Park, PhD, Founder & CTO, Enevate Corp.

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

Stefan Goede, CTO, Co-Founder, Munich Electrification GmbH

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

10:50 Challenging Battery Aging Myths: Measurement Data Shows That EV Batteries Far Exceed Their Lifespan Expectations

Markus Hackmann, Managing Director, E Mobility, P3 Automotive GmbH

This study provides the audience with critical insights into actual health performance of EV batteries and offering a better outlook on the longevity of batteries than initially expected. It underscores the importance of accurate, independent SoH measurement, which allows both manufacturers and consumers to make informed decisions regarding the use and resale of EVs.

11:10 Battery Cost Reduction: A Crucial Strategy for Automotive OEMs Facing Profitability Challenges and Rising Chinese Competition

Wolfgang Bernhart, Senior Partner, Automotive Competence Center, Roland Berger Strategy Consultants GmbH

The energy storage market in Europe is undergoing significant expansion, driven by increased demand for sustainable energy solutions. This presentation will look at innovative technologies and supportive policies that are fostering growth and positioning Europe as a key global player in advancing energy storage solutions.

11:30 Presentation to be Announced



11:50 MODERATED Q&A: Session Wrap-Up

Moderator: Kevin Konecky, Vice President, Battery Systems Engineering, Ola Electric Panelists:

Markus Hackmann, Managing Director, E Mobility, P3 Automotive GmbH

Wolfgang Bernhart, Senior Partner, Automotive Competence Center, Roland Berger Strategy Consultants GmbH

Speaker to be Announced, BTR New Energy Materials Inc

12:10 Networking Luncheon (Sponsorship Opportunity Available)

12:50 Dessert Break in the Exhibit Hall with Last Chance for Poster Viewing (Sponsorship Opportunity Available)

xEV BATTERY TECHNOLOGY

13:20 Chairperson's Remarks

Stefan Goede, CTO, Co-Founder, Munich Electrification GmbH

13:25 Increasing Battery System Performance

Kevin Konecky, Vice President, Battery Systems Engineering, Ola Electric

Battery systems are complex systems with the battery cell as the core technology of the system, but then integrated with multiple subsystems, including mechanical, thermal, and battery management systems (BMS). This presentation will look into the different subsystems that contribute to the overall battery system performance and opportunities for improvement in next-generation battery systems. Battery system trends in the industry will be evaluated and discussed.

13:45 Advanced Mechanical Components for Current & Future Cells

Peter Kritzer, PhD, Senior Application Manager E Mobility & Batteries, Freudenberg Sealing Technologies GmbH & Co KG

Mechanical cell components offer a significant, but currently underestimated potential to improve cells. This presentation gives an overview of Freudenberg's product portfolio for Lithium Cells. Main products are Cell Caps and Cell Stack Envelopes. Furthermore, new cell housing concepts for Solid State Cells will be presented, which may overcome the current challenges of these cells.

14:05 Composite Current Collectors—Critical Materials for Next Generation Batteries



Jianzhong Xia, R&D Director, Research Institute, Nanopore Innovative Materials

As a novel type of battery material, composite current collectors have progressed from laboratory development to large-scale industrialization. They have garnered significant attention from battery manufacturers due to their ability to enhance battery safety during mechanical abuse, improved energy density, and reduced usage of metal resources. However, because the physical properties of composite current collectors lie between conventional metal foils and plastic films, corresponding adjustments are necessary in battery production processes such as coating, calendaring, tab welding, and etc. This presentation will share Nanopore's experiences in the research, development, and production of composite current collectors, as well as their application in downstream process of battery industries. Furthermore, we will provide a novel interpretation of the safety improvement mechanisms of composite current collectors during mechanical abuse.

LOW-VOLT ENERGY STORAGE SYSTEMS

14:25 Sodium-ion vs. Lithium-ion: Advancing Low-Voltage Batteries for Sustainable Automotive Applications

Brahim Soltani, Team Manager, Battery & Safety, IAV France SASU

The automotive industry is reducing emissions amid global warming concerns, with the EU planning a 2035 ban on internal combustion engines. While electric vehicles are key, complementary solutions like improving low-voltage batteries in mild hybrids are needed. IAV and partners are testing SIBs to evaluate their potential for cleaner, low-voltage automotive applications.

14:45 MODERATED Q&A: Session Wrap-Up

Moderator: Stefan Goede, CTO, Co-Founder, Munich Electrification GmbH Panelists:

Kevin Konecky, Vice President, Battery Systems Engineering, Ola Electric

Peter Kritzer, PhD, Senior Application Manager E Mobility & Batteries, Freudenberg Sealing Technologies GmbH & Co KG

Jianzhong Xia, R&D Director, Research Institute, Nanopore Innovative Materials

Brahim Soltani, Team Manager, Battery & Safety, IAV France SASU

15:05 Session Break

CLOSING PLENARY PANEL DISCUSSION

15:15 Roadmap to 2040: Opportunities & Illusions



Moderator: Arnold Lamm, PhD, Founder & Executive Director, E-Mobility, e-Technologies GmbH

As the world transitions to electrification, many challenges and market corrections lay ahead. This panel of experts will discuss forecasts for 2040, providing insights about opportunities, challenges, barriers, and key factors shaping the 2040 roadmap and where the industry is going in the near term.

Panelists:

Peter Lamp, PhD, Senior Strategic Advisor, Scires Battery Technologies GmbH'

Markus Hackmann, Managing Director, E Mobility, P3 Automotive GmbH

Anne Oxley, Founder & CTO, Brazilian Nickel

Joern Neuhausen, PhD, Director, PwC Strategy



25-26 JUNE 2025 | MAINZ, GERMANY

GLOBAL BATTERY RAW MATERIALS

Balancing Supply, Demand & Costs for Battery Component Materials

WEDNESDAY 25 JUNE

11:30 Registration Open

12:40 Networking Luncheon (*Sponsorship Opportunity Available*)

13:30 Dessert Break in the Exhibit Hall with Poster Viewing
(*Sponsorship Opportunity Available*)

14:00 Organizer's Remarks

Craig Wohlers, General Manager, Cambridge EnerTech

GLOBAL DEMAND FOR BATTERY RAW MATERIALS

14:05 Chairperson's Remarks

William Adams, Head of Battery Research, Cobalt & Lithium & Battery Materials Research, Fastmarkets

14:10 Lithium in the Terawatt-Hour Era

Andrew Miller, COO, Benchmark Mineral Intelligence

After closely tracking and analysing a tumultuous 12 months for the lithium market, what lessons can we learn? What does the remainder of 2024 have in store for supply & demand, and how will this affect prices for this specialty chemical so vital to electrification?

14:30 The Role of the Supply Chain in Delivering Cost-Competitiveness in Batteries

Sam Adham, Head of Battery Value Chain, CRU

Battery manufacturers and automakers are prioritising cost reduction as the main survival mechanism in a market with intense price competition. We will examine how the best do it: supply chain strategies such as vertical integration go hand-in-hand with manufacturing know-how as well as where the bargaining power now lies in the supply chain, and the value of new strategic partnerships born out of battery- and auto-makers' involvement in raw materials.

14:50 Sponsored Presentation (*Opportunity Available*)

15:10 MODERATED Q&A: Session Wrap-Up

Moderator: William Adams, Head of Battery Research, Cobalt & Lithium & Battery Materials Research, Fastmarkets

Panelists:

Andrew Miller, COO, Benchmark Mineral Intelligence

Sam Adham, Head of Battery Value Chain, CRU

15:30 Refreshment Break in the Exhibit Hall with Poster Viewing
(*Sponsorship Opportunity Available*)

16:00 Sustainable Nickel and Cobalt for the Energy Transition

Anne Oxley, Founder & CTO, Brazilian Nickel

Brazilian Nickel's Piauí project will produce nickel and cobalt in MHP to feed EV cathode production using a lower cost, less energy intensive, simple and flexible heap leaching process. This process is inherently low carbon but BRN has several work programs looking at innovative ways to reduce the carbon footprint or even eliminate the CO₂ emissions with a view to becoming a net carbon zero or even carbon-negative producer.

16:20 Driving Sustainable Mobility: The Crucial Role of Innovation in Lithium Upstream

Stefan Debruyne, Director of External Affairs, SQM International

This presentation highlights the vital role of innovation in driving sustainable mobility, with SQM at the forefront as the world's leading lithium producer. We will explore SQM's commitment to ESG principles, resource-efficient production, and innovative efforts to reduce its footprint. Emphasis will also be placed on SQM's collaborative work with indigenous communities, focusing on value sharing and co-creation, alongside insights into the growing lithium demand and SQM's capacity expansion.

16:40 Lithium in Africa: Risks and Opportunities

Lukasz Bednarski, Principal Analyst, S&P Global

The African continent is attracting significant attention from lithium-mining companies interested in the growth opportunities represented by this region. Zimbabwe's recent success in the development and ramp-up of its mines proves that lithium mining in Africa has a future. Meanwhile, countries such as Ghana, Botswana, Namibia, and South Africa have lithium deposits that can be profitably mined even in a lower price environment, with the application of conventional methods.

17:00 MODERATED Q&A: Session Wrap-Up

Moderator: William Adams, Head of Battery Research, Cobalt & Lithium & Battery Materials Research, Fastmarkets

Panelists:

Anne Oxley, Founder & CTO, Brazilian Nickel

Stefan Debruyne, Director of External Affairs, SQM International

Lukasz Bednarski, Principal Analyst, S&P Global

17:20 Networking Reception in the Exhibit Hall with Poster Viewing
(*Sponsorship Opportunity Available*)

18:10 Close of Day

THURSDAY 26 JUNE

8:00 Registration Open and Morning Coffee

8:25 Organizer's Remarks

Craig Wohlers, General Manager, Cambridge EnerTech

GLOBAL DEMAND FOR BATTERY RAW MATERIALS

8:30 Chairperson's Remarks

Anne Oxley, Founder & CTO, Brazilian Nickel

8:35 Sponsored Presentation (*Opportunity Available*)

8:55 Global Nickel Market Outlook

Ricardo Ferreira, Director, Market Research & Statistics, International Nickel Study Group

The presentation will address the current situation of the global nickel market, including mine production, primary nickel production, primary nickel usage (consumption), and international trade. It will be based on the data published by the International Nickel Study Group (INSG) on a monthly basis and the short-term annual forecast discussed and approved by INSG's members.

9:15 Anode Active Material Supply-Chain Developments and Diversification

Joe Williams, Head of Technical Marketing, Syrah Global DMCC

Update on Natural Graphite Anode materials market developments, trade flows, and efforts toward diversification. We include some lessons from bringing up the first ex-China integrated production facility based in the USA, and some messages to consumers and policy makers across EU.

MARKET OPPORTUNITIES IN BATTERY RAW MATERIALS

9:35 Battery-Metals Outlook

William Adams, Head of Battery Research, Cobalt & Lithium & Battery Materials Research, Fastmarkets

The battery-metals prices have continued to trend lower over much of 2024, as oversupply and weaker-than-expected demand have added downward pressure. This patch of weakness is expected to be temporary, but it is having some long-term structural implications that will likely lead to more price volatility and geopolitical risk in the years ahead.



25-26 JUNE 2025 | MAINZ, GERMANY

GLOBAL BATTERY RAW MATERIALS

Balancing Supply, Demand & Costs for Battery Component Materials

9:55 MODERATED Q&A: Session Wrap-Up

Moderator: Anne Oxley, Founder & CTO, Brazilian Nickel

Panelists:

Ricardo Ferreira, Director, Market Research & Statistics, International Nickel Study Group

Joe Williams, Head of Technical Marketing, Syrah Global DMCC

William Adams, Head of Battery Research, Cobalt & Lithium & Battery Materials Research, Fastmarkets

10:15 Coffee Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

10:50 EV Sales Review for 2024, Expectations Going Forward, and Implications on Battery Demand

Viktor Irlé, Co-Founder & Market Analyst, EV Volumes

This presentation will cover the EV Sales Review of 2024, expectations going forward, and implications on battery demand, and will share the latest insights from collecting the facts in the EV industry. You will understand the best sellers, which countries and regions are doing the most for EV adoption, and what to expect in the future, both short term and long term.

11:10 Building Successful & Sustainable Battery Raw Material Supply Chains

Barry Jackson, CEO, Ascentia Resources

This presentation identifies how building sustainable raw-material supply chains can create competitive advantages for automotive and battery companies. It explores strategies for building resilient sustainable supply chains through ethical sourcing and the right partnerships. Attendees will discover market insights and how to develop sourcing strategies that capitalise on opportunities to achieve long-term successful sustainability in the battery ecosystem, reduce costs and risks, navigate market complexities, and improve competitiveness.

11:30 Sponsored Presentation (Opportunity Available)

11:50 MODERATED Q&A: Session Wrap-Up

Moderator: Anne Oxley, Founder & CTO, Brazilian Nickel

Panelists:

Viktor Irlé, Co-Founder & Market Analyst, EV Volumes

Barry Jackson, CEO, Ascentia Resources

12:10 Networking Luncheon (Sponsorship Opportunity Available)

12:50 Dessert Break in the Exhibit Hall with Last Chance for Poster Viewing (Sponsorship Opportunity Available)

MARKET OPPORTUNITIES IN BATTERY RAW MATERIALS

13:20 Chairperson's Remarks

Lukasz Bednarski, Principal Analyst, S&P Global

13:25 Implications of a Rapidly Evolving Policy Landscape for the Battery Supply Chain

Francesca Price, Senior Analyst, Critical Minerals, S&P Global

The battery supply chain has undergone a significant transformation since 2016, intensified by regulatory pressures and evolving industry expectations around responsible sourcing. This presentation will explore the opportunities and challenges of a rapidly evolving policy landscape for the EV- and battery-manufacturing sectors.

13:45 The Regionalisation of EV Supply Chains

Robert Burrell, PhD, Research Manager, Project Blue

As geopolitical tensions rise, so too do the constraints on battery materials and components. Domestic sourcing and localising supply chains remains at the forefront of the agenda for the West, but how will each region fare when it comes to building an ex-China supply chain? This talk will explore regional EV and battery supply chains and assess the bottlenecks that are forecast over the coming years.

14:05 Battery Materials Insights: Trends and Projections

Chris Welch, Reporter, Argus Media

Chris Welch, battery materials reporter at Argus Media, explores the key trends shaping market prices for battery materials such as lithium, cobalt, and nickel, and whether European firms look set to scale up capacity in the coming years amid significant competition from China.

14:25 Sponsored Presentation (Opportunity Available)

14:45 MODERATED Q&A: Session Wrap-Up

Moderator: Lukasz Bednarski, Principal Analyst, S&P Global

Panelists:

Francesca Price, Senior Analyst, Critical Minerals, S&P Global

Robert Burrell, PhD, Research Manager, Project Blue

Chris Welch, Reporter, Argus Media

15:05 Session Break

CLOSING PLENARY PANEL DISCUSSION

15:15 Roadmap to 2040: Opportunities & Illusions



Moderator: Arnold Lamm, PhD, Founder & Executive Director, E-Mobility, e-Technologies GmbH

As the world transitions to electrification, many challenges and market corrections lay ahead. This panel of experts will discuss forecasts for 2040, providing insights about opportunities, challenges, barriers, and key factors shaping the 2040 roadmap and where the industry is going in the near term.

Panelists:

Peter Lamp, PhD, Senior Strategic Advisor, Scires Battery Technologies GmbH

Markus Hackmann, Managing Director, E-Mobility, P3 Automotive GmbH

Anne Oxley, Founder & CTO, Brazilian Nickel

Joern Neuhausen, PhD, Director, PwC Strategy

16:15 Close of Conference



25-26 JUNE 2025 | MAINZ, GERMANY

EV FAST CHARGING & INFRASTRUCTURE

Leading Europe's Charge to 2030

WEDNESDAY 25 JUNE

11:30 Registration Open

12:40 Networking Luncheon (*Sponsorship Opportunity Available*)

13:30 Dessert Break in the Exhibit Hall with Poster Viewing
(*Sponsorship Opportunity Available*)

14:00 Organizer's Remarks

Ian Murray, Associate Conference Producer, Cambridge EnerTech

FAST CHARGING R&D

14:05 Chairperson's Remarks

Wulf Schlachter, Founder & CEO, DXBe Management

14:10 FEATURED PRESENTATION: Li Auto 5C Ultra Fast-Charging Battery Pack

Xiao Hua, PhD, Head of Battery Intelligence, Li Auto

Li Auto launched its first 5C battery pack on 1st March 2024. It enables a 12 minute fast charging of 500 km range. This presentation introduces this cutting edge design and the battery engineering challenges that have been tackled.

14:30 Battery Management for Fast-Charging Lithium-Metal Batteries

Brian Sisk, PhD, CTO, Sepion Technologies

Lithium-metal batteries promise energy density advantages, but must first overcome challenges related to charging, safety, degradation, cost, and system integration – delaying adoption. These challenges are exacerbated by unrealistic cycling profiles that do not align with EV usage, and by improper cell management that permits unnecessary damage. We present a systems-focused, requirements-based approach that links systems engineering, relevant cycles, cost, and materials science to help optimize lithium-metal batteries for EVs.

14:50 Sponsored Presentation (*Opportunity Available*)

15:10 MODERATED Q&A: Session Wrap-Up

Moderator: Wulf Schlachter, Founder & CEO, DXBe Management

Panelists:

Xiao Hua, PhD, Head of Battery Intelligence, Li Auto

Brian Sisk, PhD, CTO, Sepion Technologies

15:30 Refreshment Break in the Exhibit Hall with Poster Viewing

(*Sponsorship Opportunity Available*)

16:00 Sponsored Presentation (*Opportunity Available*)

16:20 Niobium Anode Battery Technology for Fast-Charging and Long-Life Applications

David Steven Jacoby, Managing Director, Energy Consulting, Boston Strategies International

Niobium anode battery technology offers a breakthrough in fast-charging and long-cycle-life energy storage, enabling significant lifecycle cost advantages across multiple transport and industrial applications. This presentation will showcase a detailed comparative analysis of niobium anode batteries versus conventional LFP batteries, demonstrating how transit buses, AGVs, forklifts, mining trucks, and e-ferries can achieve reduced fleet sizes, lower battery weight, lower battery volume, and improved operational efficiency.

16:40 Delivering Critical Power and Fast Charging in Cold Climates

Brian McCarthy, PhD, CTO, FastLion Energy

Across the temperature range that lithium-ion batteries must operate, their power output and charge acceptance changes by 1000-fold. This has traditionally been viewed as a drawback. We have flipped the script and begun using this paradigm as a tool to deliver arctic fast charging and low-cost, high-power output batteries. In this talk, we will present how we have accomplished this and how you can implement the same.

17:00 MODERATED Q&A: Session Wrap-Up

Moderator: Wulf Schlachter, Founder & CEO, DXBe Management

Panelists:

Brian McCarthy, PhD, CTO, FastLion Energy

David Steven Jacoby, Managing Director, Energy Consulting, Boston Strategies International

17:20 Networking Reception in the Exhibit Hall with Poster Viewing

(*Sponsorship Opportunity Available*)

18:10 Close of Day

THURSDAY 26 JUNE

8:00 Registration Open and Morning Coffee

8:25 Organizer's Remarks

Ian Murray, Associate Conference Producer, Cambridge EnerTech

EV INFRASTRUCTURE & CHARGING EXPERIENCE

8:30 Chairperson's Remarks

Brian Sisk, PhD, CTO, Sepion Technologies

8:35 Sponsored Presentation (*Opportunity Available*)

8:55 European Public EV Charging Infrastructure: Market Overview and Outlook

Wulf Schlachter, Founder & CEO, DXBe Management

This talk provides a comprehensive overview of the European public EV charging infrastructure market, analysing current trends, key players, and regulatory drivers. It explores challenges in scaling infrastructure, technological advancements, and investment opportunities. This presentation will highlight strategies to support widespread EV adoption and achieve Europe's sustainability goals.

9:15 Driving Cross-Border Interoperability: The Key to a Reliable and Seamless EV Charging Experience

Adriana Fricke, Senior Manager, Public Affairs, Hubej

This talk highlights the need for a seamless and reliable EV charging experience across Europe. We discuss e-Roaming, enabling cross-border interoperability for effortless charging. The discussion covers regulatory, business, and technological advancements shaping the future of EV charging. By aligning industry efforts and leveraging interoperability, we can build a frictionless, scalable, and user-centric EV charging ecosystem that accelerates the sustainable mobility transition and supports widespread EV adoption.

9:35 How Software-Defined Batteries are Redefining the Charging Experience

Ian Campbell, PhD, CEO & Co-Founder, Breathe Battery Technologies

Electric vehicles are becoming increasingly software-defined, from advanced driver assistance systems to enhanced connectivity to battery technology. With the battery representing 30% to 57% of the total vehicle cost, it's natural that OEMs are also exploring the potential for software to optimise battery performance. As we enter the era of the software-defined battery, this session



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Leading Europe's Charge to 2030

will explore the battery management software and technology innovations powering the EVs of the future.

9:55 MODERATED Q&A: Session Wrap-Up

Moderator: Brian Sisk, PhD, CTO, Sepion Technologies

Panelists:

Wulf Schlachter, Founder & CEO, DXBe Management

Adriana Fricke, Senior Manager, Public Affairs, Hubject

Ian Campbell, PhD, CEO & Co-Founder, Breathe Battery Technologies

10:15 Coffee Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

10:50 Powering the EV Transition: The Impact of Fast Charging Infrastructure on Electric Vehicle Adoption

Vinod Dhanraj, R&D Project Manager, Siemens

This presentation will provide a comprehensive overview of how EV charging infrastructure is poised to enable a seamless and sustainable electric transportation ecosystem despite the current complexities and challenges. The presentation will investigate what "fast" truly means in the context of EV charging. Additionally, the technical challenges will be examined and insights into future trends and innovations will be provided that could shape the next generation of EV charging solutions.

11:10 Protecting against Fraud on Large-Charging Networks

Peter van Zuylen, Director Fraud & Roaming, Last Mile Solutions

The e-mobility market is becoming increasingly mature, so fraudsters are now finding our industry to make money. I have found over 40 different ways to commit fraud, and we have seen cases where a CPO or EMSP was frauded for at least 250,000 euros in just two months. Protect your company by checking how you can detect and act in your systems to prohibit fraud.

11:30 Sponsored Presentation *(Opportunity Available)*

11:50 MODERATED Q&A: Session Wrap-Up

Moderator: Brian Sisk, PhD, CTO, Sepion Technologies

Panelists:

Vinod Dhanraj, R&D Project Manager, Siemens

Peter van Zuylen, Director Fraud & Roaming, Last Mile Solutions

12:10 Networking Luncheon *(Sponsorship Opportunity Available)*

12:50 Dessert Break in the Exhibit Hall with Last Chance for Poster Viewing *(Sponsorship Opportunity Available)*

GRID-SCALE ENERGY STORAGE

13:20 Chairperson's Remarks

Adriana Fricke, Senior Manager, Public Affairs, Hubject

13:25 BESS in Germany: Market Trends and Revenue Streams

Farzad Sarfarazi, RES + BESS Business Model Analyst, Uniper

Germany's stationary storage capacity is approaching 20 GWh, with most installations in the residential sector. However, a growing pipeline of large-scale battery energy storage systems (BESS) suggests a significant market shift. This presentation examines current technological and economic trends for utility-scale BESS, exploring the challenges and opportunities ahead.

13:45 ESS Pricing and Market Trends in North America

Benjamin Campbell, Manager, Battery Research, E Source

This presentation provides an analysis of the current state of stationary energy storage markets, focusing on key trends in demand and technology adoption in North America. Battery costs will be central to this session, with a focus on how new technologies are impacting stationary storage project costs and how we expect markets will respond to changing ESS economics in the face of policy uncertainty.

14:05 Optimising Energy Storage: Drivers for Novel Technology Deployment

Chloe Herrera, Energy Storage Analyst, Lux Research

Growing energy storage needs span diverse applications and durations, demanding a mix of technologies. This presentation explores novel storage solutions, focusing on the economic and practical challenges of integration. It introduces a framework for evaluating application-specific requirements and timelines, addressing deployment barriers, and outlining strategies to overcome them. These insights will highlight pathways to enable efficient and scalable energy storage deployment across sectors.

14:25 Analysing the Growing Need for Energy Storage in Industrial Applications

Bernhard Riegel, Director, R&D, HOPPECKE Batterien GmbH & Co. KG

Global demand for stationary Battery Energy Storage Systems (BESS) is surging, driven by applications like grid services, energy cost reduction, and solar self-consumption. Annual battery demand is expected to reach 475–850 GWh by 2030, with a CAGR of 30–44% (2020–2030). This presentation examines key technologies—lithium-ion, redox flow, high-temperature sodium (NaNiCl, NaS), and lead-acid batteries—focusing on their technical features, performance, and integration into large-scale BESS.

14:45 MODERATED Q&A: Session Wrap-Up

Moderator: Adriana Fricke, Senior Manager, Public Affairs, Hubject

Panelists:

Farzad Sarfarazi, RES + BESS Business Model Analyst, Uniper

Benjamin Campbell, Manager, Battery Research, E Source

Chloe Herrera, Energy Storage Analyst, Lux Research

Bernhard Riegel, Director, R&D, HOPPECKE Batterien GmbH & Co. KG

15:05 Session Break

CLOSING PLENARY PANEL DISCUSSION

15:15 Roadmap to 2040: Opportunities & Illusions



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Joern Neuhausen, PhD, Director, PwC Strategy

16:15 Close of Conference



25-26 JUNE 2025 | MAINZ, GERMANY

GLOBAL BATTERY MANUFACTURING PRODUCTION

Maximising Production Efficiency & Quality to Deliver on Global Demand

WEDNESDAY 25 JUNE

11:30 Registration Open

12:40 Networking Luncheon (*Sponsorship Opportunity Available*)

13:30 Dessert Break in the Exhibit Hall with Poster Viewing
(*Sponsorship Opportunity Available*)

14:00 Organizer's Remarks

Craig Wohlers, General Manager, Cambridge EnerTech

MARKET EXPANSION FOR GLOBAL BATTERY MANUFACTURING

14:05 Chairperson's Remarks

Eric Boschert, Battery Manufacturing Expert, Jacobs Engineering

14:10 Presentation to be Announced

14:30 The European Battery Industry's Outlook against Chinese Market Dominance and Declining EV Sales Growth

Wolfgang Bernhart, Senior Partner, Automotive Competence Center, Roland Berger Strategy Consultants GmbH

Outlook on achieving manufacturing targets with on-demand supply balance for Li, Ni, Co, Mn, and graphite; alternative feedstock and processing routes; comparing costs and CO2 emission; strategies to secure critical raw materials adopted by major players; framework for holistic evaluation of manufacturing strategies.

14:50 Innovations in Solid-State Batteries: Halide-Based Electrolytes and Multifunctional Protection Materials

Speaker to be Announced, Saint Gobain Tape Solutions

The dynamic electric vehicle market, along with the forces driving its evolution, necessitates ongoing technological advancements, particularly in solid-state battery development. Saint-Gobain's comprehensive portfolio of products and capabilities across the entire battery value chain is well positioned to support this continuous technological journey.

This presentation will explore the challenges and possible solutions associated with solid electrolytes and demonstrate how Halide-based technology effectively addresses these issues. The presentation will also highlight advanced battery pack protection materials designed to tackle the mechanical and thermal challenges presented by various battery technologies.

15:10 MODERATED Q&A: Session Wrap-Up

Moderator: Eric Boschert, Battery Manufacturing Expert, Jacobs Engineering

Panelists:

Wolfgang Bernhart, Senior Partner, Automotive Competence Center, Roland Berger Strategy Consultants GmbH

15:30 Refreshment Break in the Exhibit Hall with Poster Viewing
(*Sponsorship Opportunity Available*)

16:00 Electric Vehicles and Batteries Market Trends and Outlook

Teo Lombardo, PhD, Analyst, Energy Technology Perspectives, Intl Energy Agency

EVs and batteries are at a turnaround: tight profit margins across the battery supply chain favor large and integrated producers, and increased competition in the EV market pushes toward cheaper chemistries. This presentation from the IEA summarizes the latest market trends, recent developments, and outlook of the electric vehicle and battery markets, highlighting the challenges and opportunities in this rapidly evolving landscape.

16:20 Comparing Regional Strengths in a Global Perspective: Policy and Practice to Drive Battery Manufacturing in Europe

Eden Liu, Analyst, New Energy, SMM Global UK Ltd.

Comparison and insights into the global battery manufacturing landscape: comparing the competitiveness of Europe, North America, and Asia in terms of cost, infrastructure, supply chain, and policy. A synergistic drive between policy

and markets: exploring the latest European policies and analysing their practical impact on local manufacturing companies and supply chains. Discuss how policies can help to alleviate pressure on raw material supply chains.

16:40 Filling the Talent Gap in the Battery Industry

Jordan Elkins Wilde, Head of People, American Battery Technology Company

A discussion around hiring and developing top talent in the battery industry. Led by Battery Talent Acquisition Leader, Jordan Elkins, this presentation will cover three strategies to increase technical and operational battery talent in your company while also addressing ways to increase diversity, equity, and inclusion in the workplace.

17:00 MODERATED Q&A: Session Wrap-Up

Moderator: Eric Boschert, Battery Manufacturing Expert, Jacobs Engineering

Panelists:

Teo Lombardo, PhD, Analyst, Energy Technology Perspectives, Intl Energy Agency

Eden Liu, Analyst, New Energy, SMM Global UK Ltd.

Jordan Elkins Wilde, Head of People, American Battery Technology Company

17:20 Networking Reception in the Exhibit Hall with Poster Viewing
(*Sponsorship Opportunity Available*)

18:10 Close of Day

THURSDAY 26 JUNE

8:00 Registration Open and Morning Coffee

8:25 Organizer's Remarks

Craig Wohlers, General Manager, Cambridge EnerTech

SCALING GLOBAL BATTERY PRODUCTION

8:30 Chairperson's Remarks

Wolfgang Bernhart, Senior Partner, Automotive Competence Center, Roland Berger Strategy Consultants GmbH

8:35 Sponsored Presentation (*Opportunity Available*)

8:55 Industrial Policy in Europe, Asia, and the U.S. –Measures to Strengthen Local Cell Production

Christoph Neef, PhD, Senior Scientist, Fraunhofer Institute for Systems and Innovation Research ISI

The question of the competitiveness of cell manufacturing has long since moved from the level of technological expertise and access to supply chains, to the level of industrial policy frameworks. The presentation will highlight current policies (funding, regulation, tariffs) in the U.S., Europe, and China in the areas of R&D, scale-up, and demand, and paint a picture of the most important factors for cell manufacturing in Europe.

9:15 Market-Responsive Manufacturing: Exploring Strategies for Dynamic Gigafactories

Eric Boschert, Battery Manufacturing Expert, Jacobs Engineering

2025 brings increased competition, shifting government priorities, and new technologies to the electric vehicles, battery cells, and raw material manufacturing markets. Producers increasingly focus on being dynamic and adaptable in response and look to facility design partners such as Jacobs Engineering to identify solutions. In this session, we'll explore several strategies for gigafactories, highlighting the benefits and challenges associated with each based on our global and European experience.

9:35 Electrode Inspection Utilising Scanning Electron Microscope Analysis and Its Application to Process Informatics for Quality Control in Battery Manufacturing

Jun Kawaji, PhD, Chief Researcher, R&D, Hitachi Research Lab

Battery quality depends on various parameters in the manufacturing process and the precise adjustment of parameters is essential to keep a sufficient yield, which requires economic- and time costs. This presentation will focus on PI





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concept, electrode inspection using a scanning electron microscope, and its effect on the PI prediction accuracy.

9:55 MODERATED Q&A: Session Wrap-Up

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Panelists:

Christoph Neef, PhD, Senior Scientist, Fraunhofer Institute for Systems and Innovation Research ISI

Eric Boschert, Battery Manufacturing Expert, Jacobs Engineering

Jun Kawaji, PhD, Chief Researcher, R&D, Hitachi Research Lab

10:15 Coffee Break in the Exhibit Hall with Poster Viewing

(Sponsorship Opportunity Available)

10:50 Surviving the Cost War: Innovation as the Key to Battery Manufacturing Success

Moshiel Biton, CEO, Addionics

This talk examines the evolving battery market, particularly in the EV sector, and argues that innovation is the key to survival. By adopting technologies that boost performance, cut costs, and enhance sustainability, manufacturers can overcome obstacles and secure their role in the future of energy.

11:10 Coming to America: Lessons Learned from New Plant Investments

David Verner, Director of Energy Strategy, Gresham Smith & Partners

Over the next decade, an increasing number of companies are expected to expand their current operations or establish their first manufacturing site in the United States. The complex journey required to establish a new manufacturing operation in a foreign country can be challenging. This presentation will highlight lessons learned from past experiences and provide recommendations to avoid setbacks, thereby paving the way for a successful new business venture.

11:30 Sponsored Presentation *(Opportunity Available)*

11:50 MODERATED Q&A: Session Wrap-Up

Moderator: Wolfgang Bernhart, Senior Partner, Automotive Competence Center, Roland Berger Strategy Consultants GmbH

Panelists:

Lukas Kothmeier, Managing Director, Lukas Kothmeier Consulting Group

David Verner, Director of Energy Strategy, Gresham Smith & Partners

Moshiel Biton, CEO, Addionics

12:10 Networking Luncheon *(Sponsorship Opportunity Available)*

12:50 Dessert Break in the Exhibit Hall with Last Chance for Poster Viewing *(Sponsorship Opportunity Available)*

SCALING GLOBAL BATTERY PRODUCTION

13:20 Chairperson's Remarks

Christoph Neef, PhD, Senior Scientist, Fraunhofer Institute for Systems and Innovation Research ISI

13:25 Assessment of Innovative Production Technology for Battery Production

Tim Wicke, Research Associate, Fraunhofer Institute for Systems & Innovation Research

A method presented in the talk offers the possibility of comparing different process technologies with each other on the basis of all relevant aspects in a multi-criteria manner. In doing so, costs, throughput, quality, and sustainability are compared. An MCDA process thus makes it possible to select an optimised system for the individual requirements of cell production.

13:45 How to Find the Right Manufacturing Partners without Gigafactory References

Lukas Kothmeier, Managing Director, Lukas Kothmeier Consulting Group

Many gigafactories in the planning phase face a significant challenge. The cost pressure is immense, and prices for Li-ion batteries continue to decline. At the same time, there are only a few suppliers with qualified gigafactory references available. So, how can the right partners be identified who stay within the budget and successfully manage production ramp-up without having a gigafactory reference?

SUSTAINABILITY IN BATTERY MANUFACTURING

14:05 Towards More Sustainable Battery Manufacturing—A Process and Product Point of View

Yvan Reynier, PhD, Research Engineer, LITEN, CEA Grenoble

Thanks to its positioning all along the value chain of battery technology, CEA LITEN gets a general view on the various problematics to be tackled to lessen batteries' impact. During this presentation I'll try to highlight some roadblocks to avoid and caveats when trying to achieve more sustainable batteries, from materials selection to cell- and battery-pack design with their BMS.

14:25 Sponsored Presentation *(Opportunity Available)*

14:45 MODERATED Q&A: Session Wrap-Up

Moderator: Christoph Neef, PhD, Senior Scientist, Fraunhofer Institute for Systems and Innovation Research ISI

Panelists:

Tim Wicke, Research Associate, Fraunhofer Institute for Systems & Innovation Research

Yvan Reynier, PhD, Research Engineer, LITEN, CEA Grenoble

15:05 Session Break

CLOSING PLENARY PANEL DISCUSSION

15:15 Roadmap to 2040: Opportunities & Illusions



Moderator: Arnold Lamm, PhD, Founder & Executive Director, E-Mobility, e-Technologies GmbH

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Panelists:

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16:15 Close of Conference



25-26 JUNE 2025 | MAINZ, GERMANY

BATTERY INTELLIGENCE

Using Machine Learning and Artificial Intelligence to Optimise Battery Development from Materials to Manufacturing

WEDNESDAY 25 JUNE

11:30 Registration Open

12:40 Networking Luncheon (*Sponsorship Opportunity Available*)

13:30 Dessert Break in the Exhibit Hall with Poster Viewing (*Sponsorship Opportunity Available*)

14:00 Organizer's Remarks

Victoria Mosolgo, Conference Producer, Cambridge EnerTech

AI BATTERY MARKET

14:05 Chairperson's Remarks

Tal Sholklipper, PhD, CEO & Co-Founder, Voltaiq, Inc.

14:10 AI in the Battery Industry: Technology Impact and Business Potential

Philipp Wunderlich, Battery Technology Lead, Accenture

Presented by Accenture, this talk explores AI's transformative potential in the battery industry. The presentation examines the influence of AI on different industries and the opportunities it creates, discusses the adaptation of AI solutions to the battery industry, and highlights use cases along the battery lifecycle. Going beyond the current state of possibilities, future promises and limitations of battery AI are presented together with practical development recommendations for businesses.

14:30 Building the Foundation for Battery AI

Tal Sholklipper, PhD, CEO & Co-Founder, Voltaiq, Inc.

AI's potential in the battery industry has fallen short, with issues like inaccurate recommender systems, poor lifetime predictions, and lengthy data entry processes. The key to unlocking better insights lies in clean, real-time data, which is critical for scaling AI in this space. Given the complexity of battery chemistries, supply chains, and production, standardized data collection is essential for effective AI in production environments.

14:50 Smart Manufacturing System for LMFP

Jack Lee, Vice President, Equipment, HCM CO., LTD.

As a critical cathode material for lithium-ion batteries, Lithium Manganese Iron Phosphate (LMFP) is gaining significant industry attention for its potential to enhance battery performance and sustainability. HCM is leading the charge in LMFP development with its strong in-house equipment R&D capabilities, enabling both material innovation and large-scale production. This presentation will explore the advancements in key manufacturing equipment, the application of CFD simulation technology, and the integration of digital intelligent manufacturing systems.



15:10 MODERATED Q&A: Session Wrap-Up

Moderator: Tal Sholklipper, PhD, CEO & Co-Founder, Voltaiq, Inc.

Panelists:

Philipp Wunderlich, Battery Technology Lead, Accenture

15:30 Refreshment Break in the Exhibit Hall with Poster Viewing

(*Sponsorship Opportunity Available*)

16:00 Enabling Agentic AI for Battery Research

Eibar J. Flores, Research Scientist, SINTEF Industry

Predictive and Generative AI are commonplace in battery research, but as Agentic AI emerges, are we prepared to embrace Battery Intelligence driven by AI Agents? In this contribution, we present two critical technologies we develop to enable agentic AI in battery research: Semantic Technologies, which embed data with context and meaning understandable by agents, and Explainable AI, which brings transparency to the decisions agents make autonomously.

16:20 Virtual Design and Performance Analysis of Li-ion Batteries with Physics-Based Simulations

Falco Schneider, PhD, Scientist, Flow and Material Simulation, Fraunhofer ITWM

Physics-based simulations allow to make predictions about the thermo-

electrochemical behaviour of Li-ion batteries and provide a tool for cause-and-effect analysis for experimental observations. In this talk we are going to discuss how such models can be used to perform digital performance analysis of Li-ion batteries. Due to their physical nature, the models allow to conduct studies under exactly controlled conditions and potentially extend existing experimental data sets.

16:40 Advanced AI for Battery Modelling

Remus Teodorescu, PhD, Professor, IEEE Fellow, Villum Investigator, Aalborg University

In the past two years, Large Language Models (LLMs) have seen unprecedented growth, marked by significant advancements in foundation models, generative AI, reasoning capabilities, and intelligent agents. This progress has paved the way for innovations in battery modelling, diagnostic and control, enabling NVIDIA GPU AI acceleration of complex physical models using Physics-Informed Neural Networks (PINN) and online optimization of ultra-fast charging and V2G currents to minimise additional degradation effectively.?

17:00 MODERATED Q&A: Session Wrap-Up

Moderator: Tal Sholklipper, PhD, CEO & Co-Founder, Voltaiq, Inc.

Panelists:

Eibar J. Flores, Research Scientist, SINTEF Industry

Falco Schneider, PhD, Scientist, Flow and Material Simulation, Fraunhofer ITWM

Remus Teodorescu, PhD, Professor, IEEE Fellow, Villum Investigator, Aalborg University

17:20 Networking Reception in the Exhibit Hall with Poster Viewing

(*Sponsorship Opportunity Available*)

18:10 Close of Day

THURSDAY 26 JUNE

8:00 Registration Open and Morning Coffee

8:25 Organizer's Remarks

Victoria Mosolgo, Conference Producer, Cambridge EnerTech

BATTERY MANAGEMENT SYSTEMS

8:30 Chairperson's Remarks

Remus Teodorescu, PhD, Professor, IEEE Fellow, Villum Investigator, Aalborg University

8:35 Anode Potential for Better BMS: Optimising Battery Management Systems for Performance and Longevity

Dr. Michael Baumann, Founder and Co-CEO, TWAICE Battery Analytics

Learn how the cutting-edge anode-potential simulation model can be seamlessly integrated into your battery development process to enhance performance and longevity. This session will provide an in-depth look at how the model works to prevent lithium plating, avoid battery fires, and mitigate non-linear aging. Attendees will learn how this innovation supports faster, safer charging and extends battery lifespan.



8:55 Battery Management System by Multi-Domain Digital Twin

Doniyor Urishov, Research Scientist, Transport Technology, VTT Technical Research Center of Finland

The project BATMAX sets out to pave the way for advanced next-generation data-based and adaptable battery management systems capable of fulfilling the needs and requirements of various mobile and stationary applications and use cases.

9:15 Advanced Battery Management System for EV Application

Saeid Habibi, PhD, Professor Mechanical Engineering, Center for Mechatronics & Hybrid Technologies, McMaster University

This study presents an advanced strategy for State of Charge (SOC) and State of Health (SOH) estimation that has achieved errors of less than 1%. This strategy includes combined spectral and temporal characterisation of cells. It uses the Smooth Variable Structure Filter together with the Interacting Multiple Model concept for estimation.



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BATTERY INTELLIGENCE

Using Machine Learning and Artificial Intelligence to Optimise Battery Development from Materials to Manufacturing

9:35 Battery Modelling and Data-Driven Health Estimation

David A. Howey, PhD, Professor, Engineering Science, University of Oxford

This talk explores battery modelling and data-driven techniques for health estimation, focusing on predictive algorithms and models to assess battery performance, aging, and degradation. Emphasising real-world applications, it aims to enhance reliability, efficiency, and lifespan across energy storage systems.

9:55 MODERATED Q&A: Session Wrap-Up

Moderator: Remus Teodorescu, PhD, Professor, IEEE Fellow, Villum Investigator, Aalborg University

Panelists:

Dr. Michael Baumann, Founder and Co-CEO, TWAICE Battery Analytics
Doniyor Urishov, Research Scientist, Transport Technology, VTT Technical Research Center of Finland

Saeid Habibi, PhD, Professor Mechanical Engineering, Center for Mechatronics & Hybrid Technologies, McMaster University

David A. Howey, PhD, Professor, Engineering Science, University of Oxford

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

10:50 Accelerating Battery Characterisation and Aging Test with Machine Learning

Weihan Li, Junior Professor, RWTH Aachen University

Battery characterisation and aging tests span several months to years, posing significant challenges for manufacturers and OEMs seeking to accelerate testing and extract comprehensive insights, particularly on battery aging. This work addresses these challenges by integrating physical modelling with machine learning to analyze battery performance at the parameter level. Leveraging robotics and high-throughput testing platforms, we develop a framework that digitises and automates the testing process, enabling faster battery evaluation.

11:10 AI-Powered Monitoring and Assessment Solutions for Improved Cell and Battery Testing

Gerhard Schagerl, Product Line Mgr, Data Intelligence, AVL List GmbH

In this presentation we introduce innovative AI-based approaches to enhance testing efficiency, including machine learning for anomaly detection and predictive models, which significantly reduce testing times and the number of required test specimens.

11:30 Is Edge AI the Next Game Changer for Battery Management Software for Lithium-Ion Batteries?

Can Kurtulus, CTO, Technology & Innovation, Eaton Technologies

Edge AI is rapidly changing the landscape of battery management, and we will explore how it powers Battery Management Systems to provide real-time, localized intelligence that optimizes performance and increases safety. We'll focus on features such as AI-SOX, which ensures accurate State of Charge (SOC) estimation across a variety of chemistries (LFP, NMC, NCA) and under a wide range of temperature conditions (-20°C to 50°C) and battery life, as well as AI diagnostics, a set of algorithms that detect various failures and anomalies such as Li-plating, abnormal self-discharge, torn cell tabs etc. and estimates the risk of a thermal event.

11:50 MODERATED Q&A: Session Wrap-Up

Moderator: Remus Teodorescu, PhD, Professor, IEEE Fellow, Villum Investigator, Aalborg University

Panelists:

Weihan Li, Junior Professor, RWTH Aachen University

Gerhard Schagerl, Product Line Mgr, Data Intelligence, AVL List GmbH

12:10 Networking Luncheon (Sponsorship Opportunity Available)

12:50 Dessert Break in the Exhibit Hall with Last Chance for Poster Viewing (Sponsorship Opportunity Available)

MONITORING AND CONTROL

13:20 Chairperson's Remarks

Weihan Li, Junior Professor, RWTH Aachen University

13:25 Advanced Battery Modelling, Monitoring, and Prognosis Using Machine Learning

Changfu Zou, PhD, Associate Professor, Electrical Engineering, Chalmers University of Technology

This talk explores advancements in battery technology through physics-based modelling, advanced sensing, and their integration with machine learning. It will cover three subtopics: a novel physics-based learning framework for multiphase battery modelling, harmonized performance indicators for battery monitoring using field data, and enhanced state estimation through advanced sensing and explainable machine learning. By providing new insights and techniques, we aim to foster safer, more efficient, and longer-lasting battery usage.

13:45 Advancing Quality Control in Battery Electrode Production through Data-Driven Sensor Technologies

Muhammad Momotazul Islam, Process Development and Process Monitoring, Fraunhofer IKTS

Quality control in electrode manufacturing is essential for producing high-performance batteries used in electric vehicles, renewable energy storage, and consumer electronics. This research explores advanced sensor technologies for monitoring wet film thickness and homogeneity. The study also develops sensors for inline defect detection, using AI-based neural networks for classification. The goal is to optimise coating parameters, enhance defect detection, and integrate adaptive control systems, advancing battery production technologies and performance.

14:05 Engineering Safer Batteries: Insight into Processes Causing Self-Heating

Ulrike Krewer, Prof & Head, Karlsruhe Institute of Technology

The self-heating, the first phase of thermal events in batteries, is caused by an intricate balance of exothermic and endothermic reactions. Deciphering their interplay allows to engineer solutions to decrease the risk of a thermal event. The talk presents a model-based analysis of the impact of production conditions and cell state. High temperature operando electrochemical mass spectrometry reveals the degradation processes leading to self-heating and allows model-parameterisation.

14:25 Sponsored Presentation (Opportunity Available)

14:45 MODERATED Q&A: Session Wrap-Up

Moderator: Weihan Li, Junior Professor, RWTH Aachen University

Panelists:

Ulrike Krewer, Prof & Head, Karlsruhe Institute of Technology
Changfu Zou, PhD, Associate Professor, Electrical Engineering, Chalmers University of Technology

Muhammad Momotazul Islam, Process Development and Process Monitoring, Fraunhofer IKTS

15:05 Session Break

CLOSING PLENARY PANEL DISCUSSION

15:15 Roadmap to 2040: Opportunities & Illusions



Moderator: Arnold Lamm, PhD, Founder & Executive Director, E-Mobility, e-Technologies GmbH

As the world transitions to electrification, many challenges and market corrections lay ahead. This panel of experts will discuss forecasts for 2040, providing insights about opportunities, challenges, barriers, and key factors shaping the 2040 roadmap and where the industry is going in the near term.

Panelists:

Peter Lamp, PhD, Senior Strategic Advisor, Scires Battery Technologies GmbH

Markus Hackmann, Managing Director, E-Mobility, P3 Automotive GmbH

Anne Oxley, Founder & CTO, Brazilian Nickel

Joern Neuhausen, PhD, Director, PwC Strategy



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- Discuss your research and collaborate with interested attendees and speakers
- Your poster will be published in our conference materials
- Receive a €150 discount off your registration

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