



# PLUGVOLT®

## Battery Seminar 2021

### Oct. 05, 2021: Day 1 – Battery Training Tutorials

8:00 am – 5:00 pm	Registration Open
8:00 am – 8:25 am	Breakfast with Networking Sponsored by <b>AMERICAN BATTERY SOLUTIONS</b>
8:25 am – 8:30 am	Welcome Note
8:30 am – 9:30 am	<b>Tutorial A: All Solid-State Batteries and the Future of Energy Storage</b> Professor Y. Shirley Meng, Ph.D. – University of California, San Diego (UCSD) Darren H.S. Tan – Founder and CTO at UNIGRID Battery  Sulfide based all solid-state batteries have seen tremendous progress in recent years. However, several barriers still need to be overcome before its commercialization. Here, we discuss some obstacles faced by sulfide based solid electrolytes such as interfacial stability, characterization challenges and evaluate prototyping strategies for manufacturing scalability. Finally, we discuss potential strategies toward a sustainable recycling model to address growing battery waste problems.
9:30 am – 10:30 am	<b>Tutorial B: What Makes Solid-State Batteries Special? – Principles, Progress and Challenges</b> Professor Xin Li, Ph.D. – Harvard University  Solid-state batteries are attractive solutions for next-generation energy storage. This tutorial will focus on introducing a fundamental difference between solid and liquid electrolyte batteries, from the unique perspective of constrained thermodynamic ensemble description. Experimental implementation of this principle leads to the mechanical constriction design of solid state batteries with advanced performances. The understanding may also help solve some remaining challenges to the commercialization.
10:30 am – 11:00 am	Coffee with Networking
11:00 am – 12:00 pm	<b>Tutorial C: Opportunities and Challenges With In Operando Characterization of Solid-State Batteries</b> Professor Kelsey Hatzell, Ph.D. – Princeton University  This tutorial will go over synchrotron characterization techniques for solid state batteries, including direct real space imaging techniques and indirect space structural characterization. Considerations for in situ and in operando experimentation will be systematically discussed.
12:00 pm – 1:30 pm	Lunch with Networking Sponsored by <b>MACCOR</b>
1:30 pm – 2:30 pm	<b>Tutorial D: Trinohex™ Ultra for a Better Battery</b> Jeff Ebert – Product Application Development Leader at Ascend Materials
2:30 pm – 3:30 pm	<b>Tutorial E: Enhanced Battery State of Health Diagnostics With Battery Mechanical Monitoring</b> Jason Siegel, Ph.D. – University of Michigan  In this talk, we will investigate the challenges and opportunities for using mechanical measurements of the battery swelling during lithiation and delithiation to enhance both the state of charge estimation and the state of health diagnostics. The battery swelling can easily be measured as the outward force with load cells when clamped to a fixed length, as the cells are commonly constrained within the battery pack. The changes to the standard physics-based electrochemical battery model (known as Dual-Foil) to predict the particle strain and resulting expansion at the cell level will be discussed. Using the model we will show how the voltage and force signals contain complementary information that could be embedded into the battery management system.
3:30 pm – 4:00 pm	Coffee with Networking
4:00 pm – 5:00 pm	<b>Tutorial F: Solid-State Batteries – Mechanistic Analysis and Design</b> Professor Partha Mukherjee and Bairav S. Vishnugopi – Purdue University  This tutorial will focus on fundamental mechanism-driven analysis and design of interfaces and architectures in solid-state batteries including considerations for operational extremes.
5:00 pm – 5:30 pm	<b>Wrap-Up (Summary &amp; Conclusions)</b>

\*Agenda subject to change without notice

Chairperson: Dr. John Warner

## Oct. 06, 2021: Day 2 – Energy Storage Systems in Automotive Applications

8:00 am – 6:00 pm	Registration Open
8:00 am – 8:30 am	Breakfast with Networking <b>Sponsored by AMERICAN BATTERY SOLUTIONS</b>
8:30 am – 9:00 am	<b>Solid-State Batteries for All-Electric Future</b> Fan Xu – General Motors
9:00 am – 9:30 am	<b>Impactful Battery Research – Automotive OEM Perspective</b> Tobias Glossmann – Mercedes-Benz R&D North America
9:30 am – 10:00 am	<b>Changing EV Requirements and Their Impact on Batteries</b> Oliver Gross – Stellantis
10:00 am – 10:30 am	Coffee with Networking <b>Sponsored by BRIGHTVOLT</b>
10:30 am – 11:00 am	<b>Meeting the Various Needs of OEMs</b> Jeff Yambrick – Energy Supply Developers
11:00 am – 11:30 am	<b>How to Launch an EV – Demystifying EV Pack Development From Cell Selection to Vehicle Integration</b> Christianna Lininger – Voltaiq
11:30 am – 12:00 pm	<b>Enable Fast Charging – Internal and External Approaches</b> Minghong Liu – Ford
12:00 pm – 1:30 pm	Lunch with Networking <b>Sponsored by VOLTAIQ</b>
1:30 pm – 2:00 pm	<b>Large Format, Commercially Relevant and Practical Solid-State Battery for EV</b> Alex Yu – Factorial Energy
2:00 pm – 2:30 pm	<b>Developments in Polymer Matrix Electrolyte (PME®) for Solid-State Batteries</b> Anaba Anani – BrightVolt
2:30 pm – 3:00 pm	<b>From the Bottom-Up – Rethinking Lithium Metal Costs and Performance</b> Dean Frankel – Li-Metal
3:00 pm – 3:30 pm	Coffee with Networking <b>Sponsored by BRIGHTVOLT</b>
3:30 pm – 4:00 pm	<b>48V Battery for Mild Hybrid and Beyond</b> Priscilla Stephan – Robert Bosch Battery Systems
4:00 pm – 4:30 pm	<b>Low Voltage Battery Systems for Industrial Applications</b> John Warner – American Battery Solutions
4:30 pm – 5:00 pm	<b>Development and Production Challenges for the Success of Automotive Battery Systems</b> Gary Insana – FEV
5:00 pm – 5:30 pm	<b>Development of New Rapid Grading Processes for Repurposing Nissan LEAF Batteries for ESS</b> Rob Sides – Ametek
6:00 pm – 8:00 pm	<b>INTERTEK Facility Tours with Cocktails Reception</b> Event attendees will get an exclusive opportunity to tour INTERTEK's 100,000+ square-foot Battery Testing Center of Excellence to learn about the latest testing methods for batteries of all sizes from coin-cell through electric vehicles. INTERTEK performs a variety of tests out of this facility, to industry and global standards, including life-cycling, vibration, environmental, abuse and safety certifications. See this facility firsthand and ask questions to resident experts, and enjoy some light appetizers and beverages while networking with industry peers.

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## Oct. 07, 2021: Day 3 – Energy Storage Systems in Stationary Grid/Utility Applications

8:00 am – 5:00 pm	Registration Open
8:00 am – 8:30 am	Breakfast with Networking <b>Sponsored by AMERICAN BATTERY SOLUTIONS</b>
8:30 am – 9:00 am	<b>Modular Battery Systems for EV Charging and Grid Edge Transformation</b> Jeff Wolfe – Veloce Energy
9:00 am – 9:30 am	<b>More Energy, More Power – The Rising Demands of EV Fleets</b> Pat Hayes – ABB Inc.
9:30 am – 10:00 am	<b>Using Machine Learning to Make Better Infrastructure Decisions</b> Praveen Mandal – Volta
10:00 am – 10:30 am	Coffee with Networking <b>Sponsored by DIGATRON</b>
10:30 am – 11:00 am	<b>How Value Chains Will Impact Which Battery Technologies Will Succeed</b> Ken Hoffman – McKinsey & Company
11:00 am – 11:30 am	<b>Results From V2G Pilot Projects in North America</b> Russell Vare – Nuvve
11:30 am – 12:00 pm	<b>Grid Integration Energy Storage for Consolidated Edison</b> Jorge Tua – Consolidated Edison (ConEdison)
12:00 pm – 1:30 pm	Lunch with Networking <b>Sponsored by VOLTAIQ</b>
1:30 pm – 2:00 pm	<b>Codes Related to Repurposing EV Batteries in the Energy Storage Market</b> Jody Leber – CSA Group
2:00 pm – 2:30 pm	<b>Unlocking Usable Energy With a Simplified BMS Architecture</b> Carlton Brown – Dukosi
2:30 pm – 3:00 pm	<b>Market Perspectives – Energy Storage Systems</b> Kevin Fok – LG Energy Solution
3:00 pm – 3:30 pm	Coffee with Networking <b>Sponsored by DIGATRON</b>
3:30 pm – 4:00 pm	<b>A Spinning Tale of Energy Storage</b> Robert Abboud – Beacon Power
4:00 pm – 4:30 pm	<b>Island Utilities and the Advantages of Storage</b> Viorel Moga – Leclanche
4:30 pm – 5:00 pm	<b>New Energy, New World</b> John Aittama – Lithium Werks
5:00 pm – 5:15 pm	Closing Comments / End of Seminar

*\*Agenda subject to change without notice*

Register Online: [PlugVolt Battery Seminar 2021 Online Registration Form](#)

## Location – Battery Seminar

The Inn at St. John's  
44045 Five Mile Road  
Plymouth, MI 48170 USA  
Tel.: (001) 734-414-0600

## Location – Facility Tour

INTERTEK  
45000 Helm St. #150  
Plymouth, MI 48170 USA  
Tel.: (001) 734-582-2900

## Pricing

May 1, 2021	Registration Opens
May 1, 2021 – July 31, 2021	Early Bird: \$899/day, \$1199/2 days or \$1499/3 days
August 01, 2021 – October 04, 2021	Regular: \$999/day, \$1299/2 days or \$1599/3 days
October 05, 2021 – October 07, 2021	On-Site: \$1099/day, \$1399/2 days or \$1699/3 days
<b>Networking Pass</b> – access to evening cocktails reception and Day 2 INTERTEK facility tour (no access to seminar)	\$200/person* *already included with minimum 1-day event registration

- 10% group discount for 3+ attendees from the same corporation/institution (all attendees must register and pay at the same time)
- 25% discount for attendees from a government agency (a valid government ID is required)
- 25% discount for attendees from an academic institution (a valid academic institution ID is required)
- Contact us for additional attractive group discounts for parties of 5+ people attending from the same corporation/institution

PlugVolt® discounted room rate is available at The Inn at St. John's until September 20, 2021, following which rooms may not be available and/or available at the prevailing rate. Reservations can be made directly at:

[PlugVolt Battery Seminar 2021 Hotel Bookings](#)

## Program Outline

This seminar will provide an entire day of technical tutorials on fundamental materials' challenges for electrochemical energy storage, opportunities and challenges with solid-state batteries, best design practices for cell engineering, battery modeling and health monitoring, second life design considerations for energy storage, etc.

These presentations will be accompanied by complementary industry updates offered by subject matter experts from major multinational OEMs, Tier 1 suppliers, and battery manufacturers. Topics will cover several existing battery chemistries and their application to stationary/grid storage and automotive xEVs, along with recent advances in some Li Ion technologies, challenges in bringing these batteries to volume production, and any specific performance requirements driven by such applications.

The seminar will also offer event attendees an exclusive opportunity to tour INTERTEK Battery Testing Center of Excellence in Plymouth, Michigan (USA) facility firsthand and ask questions to resident experts, and enjoy some light appetizers and beverages while networking with industry peers.

## Questions?

Contact JC Soman at 1-877-PLUGVOLT or [juratesoman@plugvolt.com](mailto:juratesoman@plugvolt.com) for more details, or visit our website [www.plugvolt.com](http://www.plugvolt.com) or [www.batteryseminars.com](http://www.batteryseminars.com)

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