



## Battery Seminar 2021

### July 13, 2021: Day 1 – Battery Training Tutorials

8:00 am – 5:00 pm	Registration Open
8:00 am – 8:25 am	Breakfast with Networking
8:25 am – 8:30 am	Welcome Note
8:30 am – 9:30 am	<p><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 Tan – Founder and CTO at Unigrad Pte. Ltd.</p> <p>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.</p>
9:30 am – 10:30 am	<p><b>Tutorial B: Solid-State Batteries – Principles, Progress and Challenges</b>            Professor Yuan Yang, Ph.D. – Columbia University</p> <p>Solid-state batteries are attractive solutions for next-generation energy storage, as they are expected to achieve higher energy density and better thermal stability. This tutorial will present the working principles of different solid state battery systems, followed by current progress and challenges in the field. Both polymer-based and ceramic solid electrolytes will be covered.</p>
10:30 am – 11:00 am	Coffee with Networking
11:00 am – 12:00 pm	<p><b>Tutorial C: Opportunities and Challenges With In Operando Characterization of Solid-State Batteries</b>            Professor Kelsey Hatzell, Ph.D. – Vanderbilt University</p> <p>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.</p>
12:00 pm – 1:30 pm	Lunch with Networking
1:30 pm – 2:30 pm	<p><b>Tutorial D: Understanding and Avoiding Energetic Battery Failures</b>            Kevin White, Ph.D. – Principal Scientist, Exponent</p>
2:30 pm – 3:30 pm	<p><b>Tutorial E: Enhanced Battery State of Health Diagnostics With Battery Mechanical Monitoring</b>            Jason Siegel, Ph.D. – University of Michigan</p> <p>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.</p>
3:30 pm – 4:00 pm	Coffee with Networking
4:00 pm – 5:00 pm	<p><b>Tutorial F: Considerations in Second Life Energy Storage Design</b>            Michael Worry – CEO, Nuvation Energy</p> <p>Join Nuvation Energy CEO Michael Worry for this tutorial on how used EV battery packs are converted into stationary energy storage systems. He will walk through the workflow, covering topics like pack handling, determining the state of health of the used cells, and configuring the battery management system. Michael will then present some 2<sup>nd</sup> life module and pack designs and explore the trade-off decisions that were made.</p>
5:00 pm – 5:30 pm	<b>Wrap-Up (Summary &amp; Conclusions)</b>
*Agenda subject to change without notice	

Chairperson: Dr. John Warner

## July 14, 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
8:30 am – 9:00 am	<b>Title TBA</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 – Fiat Chrysler Automobiles
10:00 am – 10:30 am	Coffee with Networking <b>Sponsored by MACCOR</b>
10:30 am – 11:00 am	<b>Meeting the Various Needs of OEMs</b> Jeff Yambrick – SVOLT Energy Technology
11:00 am – 11:30 am	<b>How to Launch an EV – Demystifying EV Pack Development From Cell Selection to Vehicle Integration</b> Tal Sholkapper – Voltaiq
11:30 am – 12:00 pm	<b>Opportunities and Challenges in Solid State Batteries for EV Applications</b> Venkat Anandan – Ford
12:00 pm – 1:30 pm	Lunch with Networking <b>Sponsored by VOLTAIQ</b>
1:30 pm – 2:00 pm	<b>A Breath of Fresh Air in Solid-State Battery – A Game Changer in Polymer Electrolyte</b> Mike Zimmerman – Ionic Materials
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>Scaling AllSolid-State Batteries (ASSBs) for Electric Vehicles</b> Dean Frankel – Solid Power
3:00 pm – 3:30 pm	Coffee with Networking <b>Sponsored by MACCOR</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> Madhura Medikeri – 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>A123 Systems Facility Tours with Cocktails Reception</b> Event attendees will get an exclusive opportunity to tour A123 Systems new Novi, Michigan (USA) facility firsthand and ask questions to resident experts, and enjoy some light appetizers and beverages while networking with industry peers.

*\*Agenda subject to change without notice*

## July 15, 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
8:30 am – 9:00 am	<b>Big 3 Methods of Grid Integration for EV Charging</b> Clay Collier – ChargePoint
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 2020 Could be the Pivotal Year for Advanced Battery Adoption and a Global Shift Towards Clean Energy Solutions</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>Utility Sited Energy Storage Applications</b> Constantine Spanos – Consolidated Edison (ConEdison)
12:00 pm – 1:30 pm	Lunch with Networking <b>Sponsored by VOLTAIQ</b>
1:30 pm – 2:00 pm	<b>Optimizing PV + Storage</b> Evan Bierman – EDF Renewables
2:00 pm – 2:30 pm	<b>Understanding Energy Controllers</b> Stefan Janhunen – Nuvation Energy
2:30 pm – 3:00 pm	<b>Market Perspectives – Energy Storage Systems</b> Kevin Fok – LG Chem
3:00 pm – 3:30 pm	Coffee with Networking <b>Sponsored by DIGATRON</b>
3:30 pm – 4:00 pm	<b>Commercialization of Lithium Ion R&amp;D Innovations in the ESS Market</b> Tomasz Poznar – A123 Systems
4:00 pm – 4:30 pm	<b>Island Utilities and the Advantages of Storage</b> Mark Albert – Leclanche
4:30 pm – 5:00 pm	<b>New Energy, New World</b> Joe Fisher – 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

A123 Systems  
27101 Cabaret Drive  
Novi, MI 48377 USA  
Tel.: (001) 248-412-9100

## Pricing

January 1, 2021	Registration Opens
January 1, 2021 – May 15, 2021	Early Bird: \$899/day, \$1199/2 days or \$1499/3 days
May 16, 2021 – July 12, 2021	Regular: \$999/day, \$1299/2 days or \$1599/3 days
July 13, 2021 – July 15, 2021	On-Site: \$1099/day, \$1399/2 days or \$1699/3 days
<b>Networking Pass</b> – access to evening cocktails reception and Day 2 A123 Systems 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 June 28, 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 A123 Systems new Novi, 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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