



PLUGVOLT

July 2017 Battery Seminar

July 18, 2017: Day 1 – Fundamentals of Electro-Chemistry

8:00 am – 5:00 pm	Registration Open
8:00 am – 8:25 am	Breakfast with Networking & Poster Presentations
8:25 am – 8:30 am	Welcome Note
8:30 am – 10:00 am	<p>Introduction to Electrochemistry</p> <ul style="list-style-type: none"> • Rapidly emerging market for large format batteries, automotive electrification and re-defining the electric grid • Unique role of batteries as energy storage devices • Battery development, a historical perspective – from Volta to Elon Musk
10:00 am – 10:30 am	Coffee with Networking & Poster Presentations
10:30 am – 11:30 am	<p>Introduction to Electrochemistry as Applied to Energy Storage</p> <ul style="list-style-type: none"> • Electrochemical redox reactions and relationship to cell chemistry • Thermodynamics of cell voltages – Gibbs free energy • Electrode kinetics and influence on cell performance
11:30 am – 12:00 pm	<p>Introduction to Cells and Batteries</p> <ul style="list-style-type: none"> • Types of cells and batteries • Standard definitions • Cell and battery components – an overview of commonality • Cell design principles for energy and power – Ragone plot
12:00 pm – 1:30 pm	Lunch with Networking & Poster Presentations
1:30 pm – 2:00 pm	<p>Battery Patent Claims Reciting Scientific Information: The Now Heightened Definiteness Requirement</p> <p>Todd Ostomel – Squire Patton Boggs</p>
2:00 pm – 2:30 pm	<p>Latest Advances in Cell Technologies</p> <ul style="list-style-type: none"> • Innovations in cell active materials • Innovations in electrolytes and separators
2:30 pm – 3:00 pm	<p>Safety Aspects of Li Ion Batteries</p> <ul style="list-style-type: none"> • Cell/battery management • Tools for evaluation of cells and active materials
3:00 pm – 3:30 pm	Coffee with Networking & Poster Presentations
3:30 pm – 4:00 pm	<p>Recycling and Re-use of Batteries</p> <ul style="list-style-type: none"> • Second life, recycle, re-use, etc.
4:00 pm – 5:00 pm	<p>Beyond Lithium Ion</p> <ul style="list-style-type: none"> • Li-based technologies and others • Emerging technologies grid applications (redox batteries, advanced alkaline, etc.)
5:00 pm – 5:30 pm	<p>Key Future Trends</p> <ul style="list-style-type: none"> • Technologies and companies to watch • Closing comments

**Agenda subject to change without notice*

All Day 1 presentations by Dr. Paul Gifford – a leading independent electro-chemist – except where noted otherwise
 Chairperson: Todd Ostomel – Squire Patton Boggs

July 19, 2017: 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 & Poster Presentations
8:30 am – 9:00 am	Current Status and Challenges in Solid State Batteries for EV Applications Venkat Anandan – Ford
9:00 am – 9:30 am	Overcoming Barriers to Commercialization and Large-Scale Manufacturing of all Solid-State Batteries Nathan Taylor & Asma Sharafi – University of Michigan
9:30 am – 10:00 am	An Overview of Li Ion Battery Manufacturing Processes Wayne Cai – General Motors
10:00 am – 10:30 am	Coffee with Networking & Poster Presentations Sponsored by MACCOR
10:30 am – 11:00 am	Battery EVs in an Automated Vehicle and Mobility-as-a-Service World John Suh – Hyundai North America
11:00 am – 11:30 am	Sport Hybrid SH-AWD System for New Hybrid SUV Takeshi Someya – Honda R&D Americas
11:30 am – 12:00 pm	Keynote Presentation: Unprecedented Growth in Battery Industry – Opportunities & Challenges Dr. Christina Lampe-Onnerud – Cadenza Innovation (Founder: Boston Power)
12:00 pm – 1:30 pm	Lunch with Networking & Poster Presentations
1:30 pm – 2:00 pm	Low Voltage Lithium Ion Battery Design and Development for Application in 12V and 48V Vehicle Systems Daniel Le – Johnson Controls (JCI)
2:00 pm – 2:30 pm	12V Li Ion Batteries and Crash Safety Angela Duren – A123 Systems
2:30 pm – 3:00 pm	Battery Transportation – UN38.3 FAQs and SAE G27 Packaging Test Todd Mackintosh – General Motors & Rich Byczek – Intertek / Co-Presenters
3:00 pm – 3:30 pm	Coffee with Networking & Poster Presentations Sponsored by MACCOR
3:30 pm – 4:00 pm	Cost Effective Commercial Vehicle Hybrid Upfitting Applications for Batteries Edward Lovelace – XL Hybrids
4:00 pm – 4:30 pm	48V Batteries for Boost Recuperation Systems Carlton Brown – Robert Bosch Battery Systems
4:30 pm – 5:00 pm	Considerations Impacting the Electrical Architecture for 48V Electrified Powertrain Systems Matti Vint – Valeo North America
5:00 pm – 5:30 pm	Stretching Battery Utilization Using Novel Stress/Strain Models and Measurements Jason Siegel – University of Michigan
6:00 pm – 8:00 pm	AVL Ann Arbor Tech Center Facility Tours With Cocktails Reception Exclusive opportunity to tour AVL's New Energy Lab in its Ann Arbor Tech Center, where attendees will get to see AVL's battery and eMotor testing facilities – as well as a powertrain test cell – that set the industry standard. Enjoy drinks and appetizers while networking with industry experts and learning more about the future of testing technology.

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July 20, 2017: Day 3 – Energy Storage Systems in Stationary Grid/Utility Applications

8:00 am – 4:00 pm	Registration Open
8:00 am – 8:30 am	Breakfast with Networking & Poster Presentations
8:30 am – 9:00 am	Promise and Pitfalls in the Future of Stationary Energy Storage Tim Grejtak – Lux Research
9:00 am – 9:30 am	Customer and Utility Sited Storage Stacked Models for System Demand Management Adrienne Lalle – Consolidated Edison (ConEdison)
9:30 am – 10:00 am	Economic Optimization of Distributed Energy Assets Kate Sherwood – Advanced Microgrid Solutions
10:00 am – 10:30 am	Coffee with Networking & Poster Presentations Sponsored by EXPONENT
10:30 am – 11:00 am	Duke Energy’s Leadership Role in the Energy Storage Industry Kevin Hooker – Duke Energy
11:00 am – 11:30 am	Revenue Stacking for Grid Energy Storage – Integration is KEY Suzanne Escudier – S&C Electric Co.
11:30 am – 12:00 pm	Energy Storage Projects – Opportunities and Challenges Kevin Fok – LG Chem
12:00 pm – 1:00 pm	Lunch with Networking & Poster Presentations
1:00 pm – 1:30 pm	Big Batteries. Big Solutions! Tom Stepien – Primus Power
1:30 pm – 2:00 pm	Application of Microgrid and Stationary Energy Storage Systems John Warner – EnerDel
2:00 pm – 2:30 pm	Battery-Based Energy Storage for PV Integration Jon Carbajal – Younicos
2:30 pm – 3:00 pm	Coffee with Networking & Poster Presentations Sponsored by EXPONENT
3:00 pm – 3:30 pm	Third-Party Verification of Flow Batteries – Datacentre and Utility Applications Mio Dart – RedFlow LLC & Jeff Xu – Texas Sustainable Energy Research Institute (TSERI) / Co-Presenters
3:30 pm – 4:00 pm	The Economics of Long Duration Energy Storage – A Close Look at Grid-Scale Storage Applications Jeff Wiener – Eos Energy Storage
4:00 pm – 4:30 pm	Using Battery Energy Storage as a Diesel Generator Replacement Rajshekar Dasgupta – ElectroVaya
4:30 pm – 4:45 pm	Closing Comments / End of Seminar

**Agenda subject to change without notice*

Register Online: <http://tinyurl.com/PlugVoltJuly2017Seminar>

Location – Battery Seminar

Hilton Garden Inn Ann Arbor
1401 Briarwood Circle
Ann Arbor, MI 48108 USA
Tel.: (001) 734-327-6400

Location – Facility Tour

AVL North America
1801 E Ellsworth Road
Ann Arbor, MI 48108 USA
Tel.: (001) 734-414-9600

Pricing

February 6, 2017	Registration Opens
January 23, 2017 – May 12, 2017	Early Bird: \$699/day, \$1099/2 days or \$1399/3 days
May 13, 2017 – July 21, 2017	Regular: \$799/day, \$1199/2 days or \$1499/3 days
July 18 – 20, 2017	On-Site: \$899/day, \$1299/2 days or \$1599/3 days
Networking Pass – access to evening cocktails reception and Day 2 AVL 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)
- 10% discount for attendees from a government agency (copy of a valid government ID is required)
- 10% discount for attendees from an academic institution (copy of 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 Hilton Garden Inn Ann Arbor until 23-June-2017, following which rooms may not be available and/or available at the prevailing rate. Reservations can be made directly at:

<http://tinyurl.com/HiltonPVseminar>

Program Outline

This seminar will carry several unbiased, in-depth technical sessions on recent materials science and R&D advancements in anodes, cathodes, electrolytes, separators, etc. by Dr. Paul Gifford – a renowned independent electrochemist.

His 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 attendees an exclusive opportunity to tour AVL's New Energy Lab in its Ann Arbor Tech Center, where attendees will get to see AVL's battery and eMotor testing facilities – as well as a powertrain test cell – that set the industry standard. Enjoy drinks and appetizers while networking with industry experts and learning more about the future of testing technology.

Questions?

Contact JC Soman at 1-877-PLUGVOLT or juratesoman@plugvolt.com for more details, or visit our website www.plugvolt.com or www.batteryseminars.com

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