



# July 2017 Battery Seminar

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

8:00 am – 6:00 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><b>Introduction to Electrochemistry</b></p> <ul style="list-style-type: none"> <li>• Rapidly emerging market for large format batteries, automotive electrification and re-defining the electric grid</li> <li>• Unique role of batteries as energy storage devices</li> <li>• Battery development, a historical perspective – from Volta to Elon Musk</li> </ul>
10:00 am – 10:30 am	Coffee with Networking & Poster Presentations
10:30 am – 11:30 am	<p><b>Introduction to Electrochemistry as Applied to Energy Storage</b></p> <ul style="list-style-type: none"> <li>• Electrochemical redox reactions and relationship to cell chemistry</li> <li>• Thermodynamics of cell voltages – Gibbs free energy</li> <li>• Electrode kinetics and influence on cell performance</li> </ul>
11:30 am – 12:00 pm	<p><b>Introduction to Cells and Batteries</b></p> <ul style="list-style-type: none"> <li>• Types of cells and batteries</li> <li>• Standard definitions</li> <li>• Cell and battery components – an overview of commonality</li> <li>• Cell design principles for energy and power – Ragone plot</li> </ul>
12:00 pm – 1:30 pm	Lunch with Networking & Poster Presentations
1:30 pm – 2:00 pm	<p><b>Battery Patent Claims Reciting Scientific Information: The Now Heightened Definiteness Requirement</b></p> <p>Todd Ostomel – Squire Patton Boggs</p>
2:00 pm – 2:30 pm	<p><b>Latest Advances in Cell Technologies</b></p> <ul style="list-style-type: none"> <li>• Innovations in cell active materials</li> <li>• Innovations in electrolytes and separators</li> </ul>
2:30 pm – 3:00 pm	<p><b>Safety Aspects of Li Ion Batteries</b></p> <ul style="list-style-type: none"> <li>• Cell/battery management</li> <li>• Tools for evaluation of cells and active materials</li> </ul>
3:00 pm – 3:30 pm	Coffee with Networking & Poster Presentations
3:30 pm – 4:00 pm	<p><b>Recycling and Re-use of Batteries</b></p> <ul style="list-style-type: none"> <li>• Second life, recycle, re-use, etc.</li> </ul>
4:00 pm – 5:00 pm	<p><b>Beyond Lithium Ion</b></p> <ul style="list-style-type: none"> <li>• Li-based technologies and others</li> <li>• Emerging technologies grid applications (redox batteries, advanced alkaline, etc.)</li> </ul>
5:00 pm – 5:30 pm	<p><b>Key Future Trends</b></p> <ul style="list-style-type: none"> <li>• Technologies and companies to watch</li> <li>• Closing comments</li> </ul>

*\*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	<b>An Overview of Li Ion Battery Manufacturing Processes</b> Wayne Cai – General Motors
9:00 am – 9:30 am	<b>Current Status and Challenges in Solid State Batteries for EV Applications</b> Venkat Anandan – Ford
9:30 am – 10:00 am	<b>Sport Hybrid SH-AWD System for New Hybrid SUV</b> Takeshi Someya – Honda R&D Americas
10:00 am – 10:30 am	Coffee with Networking & Poster Presentations <b>Sponsored by MACCOR</b>
10:30 am – 11:00 am	<b>TBA</b> Adam Langton – BMW North America
11:00 am – 11:30 am	<b>Battery EVs in an Automated Vehicle and Mobility-as-a-Service World</b> John Suh – Hyundai North America
11:30 am – 12:00 pm	<b>Cost Effective Commercial Vehicle Hybrid Upfitting Applications for Batteries</b> Edward Lovelace – XL Hybrids
12:00 pm – 1:30 pm	Lunch with Networking & Poster Presentations
1:30 pm – 2:00 pm	<b>Low Voltage Lithium Ion Battery Design and Development for Application in 12V and 48V Vehicle Systems</b> Daniel Le – Johnson Controls (JCI)
2:00 pm – 2:30 pm	<b>Low Voltage Li-ion Battery Crush Requirements and Solutions</b> Angela Duren – A123 Systems
2:30 pm – 3:00 pm	<b>Overcoming Barriers to Commercialization and Large-Scale Manufacturing of all Solid-State Batteries</b> Jeff Sakamoto & Asma Sharafi – University of Michigan
3:00 pm – 3:30 pm	Coffee with Networking & Poster Presentations <b>Sponsored by MACCOR</b>
3:30 pm – 4:00 pm	<b>TBA</b> TBA
4:00 pm – 4:30 pm	<b>Considerations Impacting the Electrical Architecture for 48V Electrified Powertrain Systems</b> Matti Vint – Valeo North America
4:30 pm – 5:00 pm	<b>48V Batteries for Boost Recuperation Systems</b> Carlton Brown – Robert Bosch Battery Systems
5:00 pm – 5:30 pm	<b>Bridging the Gap Between Battery Testing and Battery Emulation Methodologies and Automated Tools for Generating Accurate Models Based on Real Batteries</b> Gernot Hacker – AVL North America
6:00 pm – 8:00 pm	<b>AVL Ann Arbor Tech Center Facility Tours With Cocktails Reception</b> 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 – 6:00 pm	Registration Open
8:00 am – 8:30 am	Breakfast with Networking & Poster Presentations
8:30 am – 9:00 am	<b>Promise and Pitfalls in the Future of Stationary Energy Storage</b> Tim Grejtak – Lux Research
9:00 am – 9:30 am	<b>Customer and Utility Sited Storage Stacked Models for System Demand Management</b> Adrienne Lalle – Consolidated Edison (ConEdison)
9:30 am – 10:00 am	<b>Renewable Peaker Plant Replacement with PV and BESS</b> Mike Simpson – AES Corporation
10:00 am – 10:30 am	Coffee with Networking & Poster Presentations <b>Sponsored by EXPONENT</b>
10:30 am – 11:00 am	<b>Energy Storage Deployments at San Diego Gas &amp; Electric Co. (SDG&amp;E)</b> Thomas Bialek – Sempra Energy
11:00 am – 11:30 am	<b>Duke Energy’s Leadership Role in the Energy Storage Industry</b> Kevin Hooker – Duke Energy
11:30 am – 12:00 pm	<b>Revenue Stacking for Grid Energy Storage – Integration is KEY</b> Suzanne Escudier – S&C Electric Co.
12:00 pm – 1:30 pm	Lunch with Networking & Poster Presentations
1:30 pm – 2:00 pm	<b>Application of Microgrid and Stationary Energy Storage Systems</b> John Warner – EnerDel
2:00 pm – 2:30 pm	<b>Energy Storage Projects – Opportunities and Challenges</b> Kevin Fok – LG Chem
2:30 pm – 3:00 pm	<b>Third-Party Verification of Flow Batteries – Datacentre and Utility Applications</b> Mio Dart – RedFlow LLC & Juan Gomez – Texas Sustainable Energy Research Institute (TSERI) / Co-Presenters
3:00 pm – 3:30 pm	Coffee with Networking & Poster Presentations <b>Sponsored by EXPONENT</b>
3:30 pm – 4:00 pm	<b>The Economics of Long Duration Energy Storage – A Close Look at Grid-Scale Storage Applications</b> Chip Russell – Eos Energy Storage
4:00 pm – 4:30 pm	<b>Using Battery Energy Storage as a Diesel Generator Replacement</b> Kunal Phalpher – Electrovaya
4:30 pm – 5:00 pm	<b>Big Batteries. Big Solutions!</b> Tom Stepien – Primus Power
5:00 pm – 5:15 pm	Closing Comments / End of Seminar

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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
<b>Networking Pass</b> – 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 lithium ion technologies, challenges faced in bringing these batteries to a high 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](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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