July 2019 Battery Seminar

July 16, 2019: Day 1 – Exponent Lithium Ion Battery Training	
8:00 am – 5:00 pm	Registration Open
8:00 am – 8:25 am	Breakfast with Networking & Poster Presentations **Sponsored by EXPONENT**
8:25 am – 8:30 am	Welcome Note
8:30 am – 9:15 am	**Manufacturing Best Practices Overview** TBA
9:15 am – 10:00 am	**Prediction Tools – Accelerated Aging** Quinn Horn, Ph.D., P.E.
10:00 am – 10:30 am	Coffee with Networking & Poster Presentations
10:30 am – 11:15 am	**Cell Cycling and Stress Testing** Joel Forman, Ph.D., P.E. Understanding long term cell performance and aging is critical for many applications. Often times, judgments about long term performance have to be made in a relatively short period of time. This session discusses a variety of tools to accelerate this testing including 24/7 cycling, elevated/sub ambient temperature testing, increased electrical load, and Arrhenius chemical modeling.
11:15 am – 12:00 pm	**The Effects of Cycling Protocols on Internal Cell Structures** Rachel Licht, Ph.D.
12:00 pm – 1:30 pm	Lunch with Networking & Poster Presentations
1:30 pm – 2:15 pm	**Basic Electronic Protection for Lithium Ion Batteries** Jeremiah Stepan, P.E., CFEI We will discuss the basic electronic designs used to protect lithium ion batteries against overcharge, overdischarge, overcurrent, undervoltage lockout, and operation outside their acceptable temperature range. Aspects of the physical assembly considerations including circuit board layout, wiring harness design, and prevention of coupling heat from failure to additional cells in the pack will be discussed.
2:15 pm – 3:00 pm	**Advanced Concepts for Lithium Ion Battery Electronics** Daren Slee, P.D. We will discuss additional protection and data preservation methods used to further reduce the likelihood of lithium ion battery failure due to electrical or thermal stress and to preserve data for failure analysis in the event of battery failures. These include communications with the host, charger, and/or load, transmittal of critical data to external systems, telemetry, active thermal management, and energy absorption materials.
3:00 pm – 3:30 pm	Coffee with Networking & Poster Presentations
3:30 pm – 4:15 pm	**Hazards due to Thermal Runaway** Michael Barry, Ph.D., P.E. Discussion of hazards due to thermal runaway failures in lithium-ion cells. We'll discuss abuse testing (external heating, nail penetration, overcharge, etc) of lithium-ion cells and the quantification of gas species evolved as a result, including the attendant hazards (heat, explosions, toxic gases).
4:15 pm – 5:00 pm	**Thermal Runaway Onset** Jonathon Harding, Ph.D.
5:00 pm – 5:30 pm	**Wrap-Up (Summary & Conclusions)**
**Agenda subject to change without notice*	

All Day 1 presentations by Exponent
Chairperson: Dr. John Warner

July 17, 2019: 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 **Sponsored by EXPONENT**
8:30 am – 9:00 am	**TBA** Rivian Automotive – Invited
9:00 am – 9:30 am	**TBA** Tobias Glossmann – Mercedes-Benz R&D North America
9:30 am – 10:00 am	**TBA** Porsche North America – Invited
10:00 am – 10:30 am	Coffee with Networking & Poster Presentations **Sponsored by MACCOR**
10:30 am – 11:00 am	**Electrified Vehicle Battery Design for Repurposing** Oliver Gross – Fiat Chrysler Automobiles
11:00 am – 11:30 am	**TBA** General Motors – Invited
11:30 am – 12:00 pm	**Roadblocks in Solid State Battery Development for EV Applications** Venkat Anandan – Ford
12:00 pm – 1:30 pm	Lunch with Networking & Poster Presentations
1:30 pm – 2:00 pm	**TBA** TBA
2:00 pm – 2:30 pm	**TBA** Solid Power – Invited
2:30 pm – 3:00 pm	**TBA** TBA
3:00 pm – 3:30 pm	Coffee with Networking & Poster Presentations **Sponsored by MACCOR**
3:30 pm – 4:00 pm	**TBA** Continental Automotive – Invited
4:00 pm – 4:30 pm	**TBA** Robert Bosch Battery Systems – Invited
4:30 pm – 5:00 pm	**Propulsion Energy Management for a 48V P0P4 Mild Hybrid Demonstrator Vehicle** Matti Vint – Valeo
5:00 pm – 5:30 pm	**Battery Transportation Updates and UN 38.3 Interpretations** Rich Byczek – Intertek
6:00 pm – 8:00 pm	**Intertek Facility Tours with Cocktails Reception** 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.

**Agenda subject to change without notice*

July 18, 2019: 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 & Poster Presentations **Sponsored by EXPONENT**
8:30 am – 9:00 am	**TBA** TBA
9:00 am – 9:30 am	**TBA** TBA – Consolidated Edison (Con Edison)
9:30 am – 10:00 am	**TBA** Greenlots (Shell) – Invited
10:00 am – 10:30 am	Coffee with Networking & Poster Presentations
10:30 am – 11:00 am	**Renewables, Energy Storage and Transportation Convergence – Challenges and Opportunities** Kurt Waldner – General Electric (GE)
11:00 am – 11:30 am	**Current and Future Technical Requirements for Battery Management Systems (BMS)** Ryan Franks – CSA Group
11:30 am – 12:00 pm	**UL 1973 and Functional Safety – Impacts on Battery Stack and BMS Design** Michael Worry – Nuvation Energy
12:00 pm – 1:30 pm	Lunch with Networking & Poster Presentations
1:30 pm – 2:00 pm	**TBA** NECES – Invited
2:00 pm – 2:30 pm	**TBA** Kevin Fok – LG Chem
2:30 pm – 3:00 pm	**TBA** Tomasz Poznar – A123 Systems
3:00 pm – 3:30 pm	Coffee with Networking & Poster Presentations
3:30 pm – 4:00 pm	**Disruptive Energy Storage Solutions for Microgrids, Telecom and C&I Applications** Ramkumar Krishnan – NantEnergy
4:00 pm – 4:30 pm	**How to Choose the Right Energy Storage Solution for Every Project** Troy Daniels – SimpliPhi Power
4:30 pm – 5:00 pm	**TBA** TBA
5:00 pm – 5:15 pm	Closing Comments / End of Seminar
**Agenda subject to change without notice*	

Register Online: PlugVolt July 2019 Battery Seminar 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

January 7, 2019	Registration Opens
January 7, 2019 – May 11, 2019	Early Bird: $699/day, $1099/2 days or $1399/3 days
May 12, 2019 – July 15, 2019	Regular: $799/day, $1199/2 days or $1499/3 days
July 16 – 18, 2019	On-Site: $899/day, $1299/2 days or $1599/3 days
Networking Pass – *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)
- 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 The Inn at St. John's until June 30, 2019, following which rooms may not be available and/or available at the prevailing rate. Reservations can be made directly at:

PlugVolt July 2019 Battery Seminar Hotel Bookings

Program Outline

This seminar will provide an entire day of in-depth training by Exponent on battery design considerations, manufacturing best practices, thermal runaway events, failure analyses, battery management systems, 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 attendees an exclusive opportunity to take a tour of the 100,000+ square-foot Intertek 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.

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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