



2nd Battery Safety, Storage, and Transportation Hands-On Seminar February 23rd, 2024

This seminar focuses on battery safety, storage, and transportation. In practical sessions, battery safety testing fire suppression will be demonstrated.

The program gives insights into the latest battery safety practices as well as state-of-the-art updates on battery safety, storage, and transportation.

Key Benefits

The seminar provides:

- Theoretical and practical sessions to learn about battery safety, storage, and transportation.

Who Should Attend?

- Battery & Electrochemistry Industry Members
- Battery Material Makers
- Battery Manufacturing Equipment Makers
- Datacenters Operations Managers
- Fire Code Officials
- Facilities Managers
- Environmental, Health, & Safety Managers
- New Technology Startup Owners
- Potential Investors in Lithium Technology
- Academic Researchers
- Other Battery Industry Members

Seminar Program Topics

- Battery Safety
- Battery Transportation
- Battery Storage
- Battery Containment Equipment
- Battery Suppression Materials
- Field Battery Safety
- Thermal Runaway Containment & Suppression Demonstration

2nd Seminar Schedule

February 23rd, 2024

Seminar Location

6200 N-I35E
Waxahachie, TX 75165
Tel: 888.705.4202



| | Seminar Agenda |
|-------------------------|---|
| 8:00-8:30 am | <i>Registration, refreshments, and networking</i> |
| 8:30-8:45 am | Introduction Welcome, introductions and opening remarks |
| 8:45-10:45 am | Battery safety, by Shmuel De-Leon of Shmuel De-Leon Energy Ltd |
| 10:45-11:00 am | <i>Morning break</i> |
| 11:00 am-1:00 pm | Battery transportation and storage regulations, by Bob Ricard and Mike Pagel of HazMat Safety Consulting |
| 1:00-2:00 pm | <i>Lunch in seminar area</i> |
| 2:00-3:00 pm | Lithium battery storage and transportation solutions, by Chris Egloff of Americase |
| 3:00-3:15 pm | <i>Afternoon break</i> |
| 3:15-5:30 pm | Battery safety field testing demonstrations, by Raymond James of Fulcrum Testing |



Seminar Syllabus

Battery Safety

Batteries have become daily use components for many applications. New growing segments like EV and Grid storage batteries extend the traditional ordinary battery applications. In the race for energy density, we shouldn't forget safety – as an example, the Samsung Galaxy Note 7 battery safety case. Unfortunately, we face daily safety events with injuries and severe damage. This tutorial focuses on portable, stationary, and automotive battery safety along the battery cycle life (acceptance, testing, assembly, use, storage, transportation, and disposal). The training incorporates Shmuel De-Leon and other experts on battery safety, representing over 30 years of work in the field. The motivation behind the training is to provide attendees with the knowledge needed to safely handle and store the batteries in their organization and to support reduction in safety events.

Topics to be covered:

- Battery Safety Hazards – videos and examples
- Battery Safety Guidelines – recommendations on proper work with batteries (acceptance, testing, battery pack design, use, storage, transportation, disposal)
- Battery Safety Events – recommendations on how to handle
- Battery Safety Equipment – checklist for labs and warehouses

Lithium Battery Transportation and On-Site Storage Regulations

Though rare, lithium battery fires are a significant source of concern among companies that store and ship batteries. As a result of battery incidents, regulators around the world have established specific rules for transporting lithium batteries, including stringent packaging, labeling, documentation, and employee training requirements. Companies that ship lithium batteries must be knowledgeable about these regulations as failure to comply may result in government fines, held shipments, and transportation incidents. Further, the safe storage of lithium batteries has become a top priority among fire code officials around the globe and new standards are in development to outline industry best practices for battery storage.

In this session, we will cover:

- *Lithium Battery Shipping Regulations*: Authorized packaging, required labels, documentation, and employee training
- *On-Site Storage of Lithium Batteries*: Upcoming changes to International Fire Codes and how lithium battery storage requirements are implemented
- *On the Horizon*: Regulatory and industry initiatives that are likely to dramatically change how lithium batteries are stored and transported

This presentation will be conducted by Bob Richard and Mike Pagel of HazMat Safety Consulting (HSC), a consulting firm made up of former US DOT PHMSA staff that specializes in the safe and compliant transport and storage of lithium ion batteries. The HSC team combines a sophisticated understanding of global dangerous goods regulations with industry experience to deliver clients solutions that are compliant with regulatory requirements and in line with industry best practices for safety and efficiency.



Lithium Battery Storage and Transportation Solutions

Some of the questions that will be addressed during this presentation are: What is the best way to store or ship lithium-ion batteries? What's the difference between compliance and containment? What are the current regulations that you need to meet and where are the future regulations headed?

In this session, we will cover:

- How a tragedy in 1996 led to safer packaging for lithium-ion batteries
- Options for shipping batteries from small button cells to large EV packs, including *Damaged, Defective, or Recalled (DDR)* and *Prototype Batteries*
- Tackling *compliance* vs. *containment* while navigating current and future regulatory requirements

This presentation will be conducted by Chris Egloff of Americase. Chris has over 15 years of experience in lithium battery packaging, storage, and transportation design, development, and testing. Some of the largest fortune 500 companies rely on Chris for his knowledge and expertise.

Battery Safety Field Testing Demonstrations

This part of the seminar will feature live demonstrations of some of the actual tests that verify product compliance with specified performance criteria and regulatory standards. These demonstrations will be conducted by Raymond James, Principal Engineer at Fulcrum Testing, Americase's in-house testing laboratory. Raymond holds a Master of Science degree in Electrical Engineering and his expertise is in designing and conducting destructive testing experiments to ensure compliance of Americase packaging solutions with all U.S. and UN DoT regulations for shipment of dangerous goods. The live test demonstrations will feature:

- *Battery Containment/Laptop*: View and compare the thermal runaway containment performance of two types of packaging/cases.
- *Fire Suppression/5-cell Drill battery*: Observe the fire suppression capabilities of a containment case after triggering a thermal runaway of a battery inside it.
- *Large Scale Battery Storage Case/Battery Backup Unit Power*: See a thermal runaway event of a large scale battery, set up in an open air environment and safely contained for observation.



Presenters



Shmuel de-Leon, *Founder and CEO, Shmuel De-Leon Energy Ltd*

Shmuel is a leading international expert in the business of batteries. Prior to founding the company, Shmuel held for over 21 years various positions as a battery, electronic engineering, and quality control team manager. Shmuel holds a BSc. in mechanical engineering from Tel-Aviv University and an MBA in quality control and reliability engineering from the Technion Institute in Haifa as well as an Electronic Technician's diploma. Shmuel has a deep knowledge on the battery technologies and market and support many customers as their main battery consultant.

Bob Richard, *President, HazMat Safety Consulting*

Bob provides dangerous goods regulatory assistance to customers worldwide by drawing on his vast experience, knowledge of the regulations and an extensive network of dangerous goods professionals worldwide. From 2006-2010, Bob served as the Deputy Associate Administrator for Hazardous Materials Safety with the Pipeline and Hazardous Materials Safety Administration (PHMSA) at the U.S. DoT, where he was responsible for directing the operation of the U.S. Hazardous Materials Transportation Safety Program, including overseeing the regulatory development, technical review and classification, international standards, outreach, special permits and approvals, and enforcement offices.



Mike Pagel, *Senior Consultant, HazMat Safety Consulting*

Mike partners with clients to improve their hazmat transportation programs. Mike started in the industry in 2012 at PHMSA's Hazardous Materials Information Center (HMIC) at DOT HQ in Washington, DC. For two years, Mike supported the HMIC by answering thousands of questions on PHMSA's Hazardous Materials Regulations. In this role, Mike worked directly with PHMSA Rulemaking, Approvals Permits, and Technical staff.





Chris Egloff, VP Sales Lithium/HazMat Division, Americase

Chris has over 15 years of industry experience, focusing on research and development of fire and heat mitigating containers and packaging, and testing batteries when pushed into thermal runaway. Chris is a member of multiple industry and standards organizations, including the Council on Safe Transportation of Hazardous Articles (COSTHA), The Rechargeable Battery Association (PRBA), Danger Goods Advisory Council (DGAC), and UN Sub Committee on the Reclassification of Lithium ion and Metal Cells. He is also an SAE G27 writing and voting member, and an advisor for the Medical Device Transport Council (MDTC).

Raymond James, Principal Engineer, Fulcrum Testing

Raymond designs and conducts destructive testing experiments to verify Americase packaging solutions satisfy customer and regulatory body safety requirements for shipping dangerous goods. Raymond has been in the industry since 2018 and is a member of multiple industry and standards organizations, including SAE G27, UN Informal Working Group on Hazard Classification of Lithium Batteries, and Battery Transportation Committee. He holds a Master of Science degree in Electrical Engineering from the University of Texas at Arlington.





Seminar Pricing and Registration

Registration

| | |
|--|--------|
| Commercial Registration: | \$1250 |
| Academic and/or Government employee registration*: | \$1000 |

* Full-time students only. Copy of Academic Institute ID is required; Government employee ID is required

Pricing includes:

1. Soft copy of all presentation
2. Continental refreshments, lunch

Cancellation of registration:

Written notice only will be accepted:

Until January 21th, 2024 – 50% refund
From January 22th, 2024 – No refund

Payment:

Registration cost can be paid by credit card via PayPal (Include 4.3% PayPal commission, No need for PayPal account):

Link for commercial registration with credit card

Link for Academic and/or Government employee with credit card

Or by wire transfer to our bank account (Customer should add the wire transfer commissions).

Bank details *

Bank Hapoalim

Hod-Hasharon BRANCH NO-626

Derech- Hasharon 69, Hod-Hasharon

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SWIFT CODE: POALILIT

BEN NAME: SHMUEL DE-LEON ENERGY LTD

ACC.NO 621046

IBAN IL40012626000000621046

Remarks:

* In case the seminar has to be cancelled due to force majeure, due to speakers' preventions or due to lack of participants, the participants will be informed accordingly no later than 7 days before the event. Only the seminar fee will be refunded in this case.

Contact Person for registration:

Shmuel De-Leon, CEO

Shmuel De-Leon Energy, Ltd

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