Batteries, Super Capacitors, Fuel Cells & EV`s Seminar

The seminar program focuses on present and future needs of portable and stationary electrochemical energy sources and highlights the latest technological developments designed to satisfy application requirements.

The program reviews primary, rechargeable, reserve batteries, fuel cells, ultra-capacitors systems and their accessories.

The seminar program reviews typical cycle life aspects of designing and manufacturing energy source solutions: from application energy requirements, power source electrical and mechanical design, cells selection, cells evaluation tests, battery prototype, acceptance tests, design and manufacturing techniques, testing, mass production, safety issues, transportation, use and disposal.

Special focus is given to battery design and testing aspects which are vital tools for battery solution.

The program trains attendees on safety issues along the energy source solution cycle life.

The program focuses on electric vehicle and Batteries, Super Capacitors, Fuel Cells and Metal Air systems for EV`s.

Key Benefits

Batteries & Fuel Cells Seminar provides:

- Full review of current and future electrochemical energy sources.
- Training on cells selection, design, manufacturing, testing, safety, and transportation and disposal aspects of energy sources.
- Basic knowledge for new industry members entering the field.
- Expands the knowledge of industry members already working in the field.
- Training on Energy Sources Database software – a vital tool for optimal energy source design.

Seminar Program Topics

- Battery characteristics
- Primary cells & batteries
- Rechargeable cells & batteries
- Lithium rechargeable cell Manufacturing process
- Battery chargers
- Military batteries
- Battery design process
- Battery safety
- Battery Suppy Chain
- Battery disposal
- The “smart battery”
- Battery testing systems
- Energy storage for the grid
- Fuel cells
- Ultra Capacitors
- The E-Mobility revolution
- xEV`s Batteries
- xEV`s Fuel Cells and Metal Air systems
- xEV`s battery swap
- xEV`s Charging infrastructure

Seminar Schedule

Shmuel De-Leon Energy, Ltd., Mazal Arie 10, Hod-Hasharon 4536045, Israel
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Who Should Attend?

- Battery and energy sources users
- Pack assemblers
- Cell makers
- Energy sources suppliers
- Academic researchers
- R&D engineers
- Market researchers
- Safety supervisors
- Battery shippers and disposals
- E-Mobility industry members
- Others industry members

About Shmuel De-Leon

Shmuel De-Leon is Founder and CEO of Shmuel De-Leon Energy, Ltd.
Shmuel is a leading international expert in the business of Power Sources, Energy storage and Ev`s.
Prior to founding the company, Shmuel held for over 20 years various positions as a power sources, engineering and quality control team manager.
Shmuel holds BSc. in mechanical engineering from Tel-Aviv University and MBA in quality control and reliability engineering from the Technion Institute in Haifa as well as an Electronic Technician's diploma.

Shmuel De-Leon Energy Ltd. provides unique tools for the energy sources industry, such as Consulting, Training, Conference organizer, Market research reports Market research reports Energy Sources Database, Market research reports , Energy Sources Solutions, Industry News weekly newsletter.

Seminar Schedule & Agenda
Day 1
08:00 – 08:30 introduction
08:30 – 09:30 Module 1: Battery Characteristics This session introduces a historical prospective of batteries, detailed battery definitions and features (electrical, mechanical, standards, etc.). Module 1 lays the foundation for the attendants to share a common “battery language” and provides all the background needed for upcoming modules**.**
09:30 – 10:30 Module 2: Primary cells & Batteries This session reviews and compares primary battery chemistries (Alkaline Manganese Dioxide, Zinc Carbon, Zinc Chloride, Silver Zinc, Nickel Oxyhydroxide, Lithium Iron Disulfide, Lithium Iodine, Lithium Manganese Dioxide, Lithium Carbon Monofluride, Lithium Sulfur Dioxide, Lithium Thionyl Chloride, Lithium Sulfuryl Chloride, Lithium Bromine Chloride and High Power Organic Lithium).
10:30 – 10:45 Coffee Break
10:45 – 12:15 Module 3: Rechargeable cells & batteries This session reviews and compares rechargeable batteries chemistries (Nickel Cadmium, Nickel Metal Hydride, Rechargeable Alkaline, Lithium Ion and Lithium Polymer).
12:15 – 12:35 Module 4: Lithium Rechargeable Cells Manufacturing Process This session reviews manufacturing process techniques for conventional and pouch cells.
12:35 – 13:00 Module 5: Chargers This session reviews battery chargers, charging techniques per battery chemistry, charging problems and solutions, personal chargers, industrial chargers and charger types by charging time**.**
13:00 – 14:00 Lunch Break
14:00 – 14:30 Module 6: Military Batteries This session reviews and compares Military batteries & Chargers (Primary, Rechargeable Batteries).
14:30 – 15:30 Module 7: Battery Design Process & Optimization

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This session introduces battery design processes (cell and raw materials selection, cell level testing, battery design documents, battery electrical, mechanical and safety design and final verification tests (electrical, mechanical, safety).
15:30 – 15:45 Coffee Break
15:45 – 17:30 Module 8: Battery Safety This session introduces the safety risks along the battery cycle life and provides safety guidelines for safety event elimination. Module 8 also addresses the procedures involved in handling safety events, including first aid.
Day 2
08:30 – 09:00 Module 9 – Battery Supply Chain This module explain the battery supply chain from raw material to final products including the names of the leading manufacturers on each segment
09:00 – 09:25 Module 9: Battery Disposal This session introduces battery disposal requirements and updates disposal status in Europe and the US.
09:25 – 09:50 Module 10: The "Smart Batteries" This session introduces the “Smart Battery” technology, including single wire and smart battery communications bus and its advantages.
09:50 – 10:30 Module 11: Battery testing systems This session introduces battery testing techniques, available systems and their features.
10:30 – 10:45 Coffee Break
10:45 – 11:30 Module 12: Energy Storage for the Grid This session introduces and reviews the common energy storage systems for the grid.
11:30 – 12:30 Module 13: Fuel Cells This session reviews and compares fuel cell types and their market status (Alkaline, Molten Carbonate, Phosphoric Acid, Proton Exchange Membrane, Solid Oxide and Direct Methanol).
12:30 – 13:30 Lunch Break
13:30 – 14:15 Module 14: Ultra Capacitors This session reviews and compares ultra capacitor types and their market status.
14:15 – 16:30 Module 15: EV Energy Solutions This session introduces EVs driving range problem and energy solutions. - The new electric automotive revolution - EV Batteries - EV Fuel Cells - EV Metal Air systems - EV Battery SWAP - EV Charging infrastructure