

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

July 11-12, 2018 – Zwolle, The Netherlands

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
- Rechargeable cells & batteries
- Lithium rechargeable cell Manufacturing process
- Battery chargers
- Battery design process
- Battery safety
- The "smart battery"
- Energy storage for the grid
- The E-Mobility revolution
- xEV's Batteries
- xEV's Fuel Cells and Metal Air systems
- xEV's battery swap
- xEV's Charging infrastructure
- Dutch-Israeli energy storage cooperation - Dr. Ten Story
- Workshop

Seminar Schedule

July 11-12, 2018

Seminar Location

Park de Stadshoeve,
Stadshagen
Oude Wetering 13
8043 MV Zwolle
www.drten.nl

Local Partner

Dr. Marnix Ten Kortenaar, Dr. Ten
gerrit@drten.nl
Tel: +316-45556706

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 Pricing

| | Commercial | Academic * |
|--|-------------|-------------|
| <u>Early Registration Discount until June 11, 2018</u> | € 810 + VAT | € 405 + VAT |
| <u>Registration from June 12, 2018</u> | € 910 + VAT | € 455 + VAT |

*** Copy of an Academic Institute ID is required**

**** 10% discount for 3+ group attendees**

***** Pricing includes hard copy print out of all seminar presentations, lunch & refreshments**

Sponsor & Exhibit Opportunities

Exhibitor and Sponsor will receive:

- 1 roll-up display at the seminar room
- Advertisement materials on a side table in the seminar room
- Logo in the seminar program, agenda and seminar web site
- Extra 10% discount on attending the seminar

Pricing: € 475 + VAT

Wednesday, July 11, 2018

08:00 – 08:30 Registration

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 – 11:00 Module 2: Rechargeable cells & batteries

This session reviews and compares rechargeable batteries chemistries (Nickel Cadmium, Nickel Metal Hydride, Rechargeable Alkaline, Lithium Ion and Lithium Polymer).

11:00 – 11:15 Coffee Break

11:15 – 11:35 Module 3: Lithium Rechargeable Cells Manufacturing Process

This session reviews manufacturing process techniques for conventional and pouch cells.

11:35 – 12:00 Module 4: 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.

12:00 – 13:00 Module 5: Battery Design Process & Optimization

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).

13:00 – 14:00 Lunch Break

14:00 – 15:30 Module 6: 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.

15:30 – 16:00 Module 7: The "Smart Batteries"

This session introduces the “Smart Battery” technology, including single wire and smart battery communications bus and its advantages

16:00 – 16:15 Coffee Break

16:15 – 17:00 Module 8: Energy Storage for the Grid

This session introduces and reviews the common energy storage systems for the grid.

Thursday, July 12, 2018

08:30 – 10:30 Module 9: EV Energy Solutions

This session introduces EVs driving range problem and energy solutions.

- The new electric automotive revolution
- EV Batteries

10:30 – 11:00 Coffee Break

11:00 – 12:00 Dutch-Israeli energy storage cooperation – The story of Dr. Ten

12:00 – 13:00 Lunch Break

13:00 – 15:30 Energy Storage Workshop – Storage growth in E-mobility and Solar/Grid Storage

**Pre-Registration Form - Energy Storage Seminar
July 11-12, 2018**

Contact Details (*Required)

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| Company * | First Name* | Last Name* |
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| Title | City* | Zip Code* |
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| Street* | Country* | State |
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| Phone* | Mobile | Fax |
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| Email* |
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*Please complete the registration form and return to:

Shmuel De-Leon Energy LTD.
10 Mazal Arie, Hod Hasharon Israel 4536045
Tel: 972-77-5010792 email: shmuel@sdle.co.il

Or to:

Dr. Ten
Gerrit@drten.nl
www.drten.nl

* Remarks:

- Cancellation of registration must be made in writing only.
- In case that the seminar will have to be cancelled due to force majeure, due to speaker's preventions or due to lack of participants, the participants will be informed accordingly no later than 7 days before the event. The event fee will be refunded in this case.
- In case of cancellation of the seminar up to 7 days before the event, a claim for compensation for travel or accommodation costs is excluded.