

## **Battery Safety Training**

Batteries become daily use components for many applications. More than that we can say that without batteries our life will change dramatically – Just think on life with no mobile phones.

In the race for energy density we sometimes forget the safety. Unfortunately we face daily safety events with injures and severe damage.

The training program focuses on portable and stationary battery safety along battery cycle life (acceptance, testing, assembly, use, transportation and disposal.

The training incorporates Shmuel De-Leon and other experience on battery safety for over 25 years of work in the field.

The motivation behind the training is to provide training attendants with the knowledge needed to handle safely the batteries in their organization and to support reduction in safety events.

## **Key Benefits**

#### Training provides:

- Full review of Root Couse for battery safety events.
- Guidelines on how to handle batteries safely.
- What to do guidelines in case of battery safety event.
- Check list of safety equipment needed.
- Fresh and updated knowledge about safety battery



# Training Program Topics

- Battery essentials
- Primary cells & batteries
- Rechargeable cells & batteries
- Battery safety hazards
- Battery safety guidelines
- Battery safety equipment
- Battery safety design
- Battery safety disposal
- Battery safety transportation
- Battery safety standards and testing
- EV Battery safety

Training include presentations and Movies

## **Training Schedule**

1 Day

## **Training Location**

In-house Training

## **Presentation Hard Copy**

Each attendant will get thepresentations hard copy (We are not providing presentations soft copies)

#### **Who Should Attend?**

- Battery and energy storage users
- Pack assemblers
- Cell makers
- Energy storage suppliers
- Academic researchers
- Energy storage/Power R&D engineers
- Organization Safety managers
- 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.

## **Training Schedule & Agenda**

#### 08:00 - 08:30 Registration

#### **08:30 – 09:15 Battery Essentials**

This session introduces the needs for of batteries, detailed battery definitions and features (electrical, mechanical). This session lays the foundation for the attendants to share a common "battery language" and provides all the background needed for upcoming sessions.

#### 09:15 - 09:45 Primary cells & Batteries

This session reviews briefly primary battery systems, advantages, dis-advantages.

#### 09:45 - 10:00 Coffee Break

#### 10:00 - 10:45 Rechargeable cells & batteries

This session reviews and compares rechargeable batteries chemistry systems advantages, disadvantages.

#### 10:45 - 11:30 Battery Safety Hazards

This session reviews all battery risks (Lead-Acid, Lithium and others...) – We will also discuss the Boeing Dreamliner battery safety event.

#### 11:30 - 12:00 Battery Safety Guidelines

This session describe the main guidelines on how to work properly with batteries and what to do in a case a safety event occur.

#### 12:00 - 13:00 Lunch Break

#### 13:00 - 13:30 Battery Safety Equipment

This session reviews list of main safety equipment needed for working areas and battery storage warehouse.

#### 13:30 - 14:00 Battery Safety Design

This session reviews safety design guidelines when designing a battery.

## 14:00 – 14:30 Battery Safety Disposal

This session review and discuss safety guidelines for disposing used batteries.

#### 14:30 – 15:15 Battery Safety Transportation

This session introduces the regulation regarding transporting batteries safely by air, sea and land.

#### 15:15 - 15:30 Coffee Break

#### 15:30 - 16:00 Battery Safety testing and standards

This session introduces the main safety standards and the UN testing procedures.

## 16:00 - 16:30 EV Battery testing

EV Batteries differ from ordinary batteries because of their high voltage and extreme conditions to be use (Temperatures, vibration and shocks...). This session review main special aspects of working safely with EV batteries.