

## **Tutorial 1: Battery Technologies**

**Tuesday, September 6, 2011, 8:30 AM – 12:00 Noon**

**Speaker:** Oliver Gross, Chrysler LLC

### **Short Biography:**

Oliver is an Energy Storage Systems Specialist, for High Voltage Energy Storage Solutions, at Chrysler Group, LLC. He holds both a BS and a Master's Degree in Materials Science, for the University of Toronto. Oliver has 20 years' experience in the advanced energy storage industry. Prior to Chrysler Oliver was at Cobasys, where he was responsible for all Nickel Metal-Hydride cell and module development, as well as the development of their lithium-ion battery portfolio. Before Cobasys, Oliver was at Valence Technology, where he was responsible for lithium-ion cell design and development, which included extended-term deployments to Northern Ireland, South Korea, and China. Before Valence, Oliver was at Ultralife, developing lithium primary and secondary cells for extreme environment applications. He currently holds over 10 patents, and more than 20 publications.

### **Tutorial Description:**

This tutorial will introduce the participant to the major electrochemistries utilized in automotive batteries. Battery applications will span low voltage and micro-hybrid systems, up to full electric vehicles. The participant will learn about the major factors determining battery size and configuration for multiple electrified powertrain applications. Materials selection, cell and battery design topologies for the more advanced (Nickel-Metal Hydride and Lithium-ion) technologies will be presented. Key factors governing life and durability, as well as battery control methodologies will be addressed. Finally, the participant will be introduced into battery safety and abuse considerations.