



The Electrochemical Society  
*Seminar Notice: Thursday, February 2<sup>nd</sup>, 2012*

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*In-Situ Reference Electrode Testing on 18650 Cells*

Mr. Jeffrey R. Belt

*Idaho National Laboratory*

The Idaho National Laboratory embarked on a large validation study of 130 commercially available 18650 sized lithium ion cells for PHEV applications. The performance dependence on temperature, state of charge, calendar life, charge depleting cycle life, charge sustaining cycle life test was investigated. At the end of the cell testing, some of these cells had reference electrodes inserted into the cell to separate the performance of the electrodes from the overall cell performance. The results from these tests will be discussed. Capacity and resistance for beginning of life conditions as well as end of life conditions will be presented. The performance limiting electrode will be identified.

Jeff is the Chief Battery Test Engineer in the Energy Storage & Transportation Systems Department at the Idaho National Laboratory (INL). He is the lead INL engineer responsible for the testing of advanced batteries and capacitors in support of the U.S. Department of Energy, FreedomCAR and Vehicle Technologies Program. While at the INL, Jeff has developed advanced testing procedures, the PHEV and HEV battery test manuals, novel data analysis tools, and life prediction models currently used by the FreedomCAR program to track development progress against technical targets. Jeff holds a Bachelor of Science degree in Chemical Engineering from Brigham Young University and a Masters Degree program in Chemical Engineering from the University of Idaho. He has fifteen years of experience developing and testing advanced batteries for automotive applications.

**Date:** Thursday, February 2<sup>nd</sup>, 2011

**Location:** Lawrence Technological University

21000 West Ten Mile Road, Southfield, MI 48075

**Building #5 (Taubman Welcome Center), 4<sup>th</sup> Floor, Room 406**

**Use Parking Lot A, C or D (Lots C & D are accessed off NW Highway)**

**Time:** 5:30 pm Reception / 6:30 pm Dinner / 7:30 pm Speaker

**Price:** \$20 Members / \$22 Guests / \$10 Students      **Payment:** Cash or Check

**RSVP by:** Wednesday January 25, 2012 to Dr. Stephen Maldonado

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<http://www.electrochem.org/ecs/sections/detr/detr.htm>

