



The Electrochemical Society – Detroit Section

Seminar Notice: Tuesday, November 6th, 2007

Hybrid Electric Vehicle Battery Technology, Modeling and Validation

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As automakers push toward commercialization and volume production of hybrid electric vehicles, the importance of advanced battery technology becomes evident. In today's production hybrids, battery cost and durability dominate the conversation. For future plug-in hybrids, advanced batteries are quite literally the key technology enabler. Therefore, consideration will be given to hybrid battery system design, cell technology options, and production implementation challenges. In addition, the importance of reliable battery models will be discussed. The hybrid electric vehicle battery model is responsible for prediction of characteristic battery performance and thermal behavior response to the driving profiles power demands. Considering computing efficiency and responsiveness, the present model is built on a semi-empirical basis with sufficiently detailed descriptions of multiple physical behaviors to cope with highly dynamic situations and long service lifetime. A set of processes is running concurrently to evaluate real-time power capability, aging and battery lifetime by using key stress factors to address accumulated cell degradation. The paper presents the model validation against key life test (KLT) data; meanwhile, it describes the importance of KLT for vehicle battery implementation. The present model also offers another important feature, the capability to feed battery performance data to the control systems for complex vehicle control simulations in the Matlab/Simulink® environment.

Date: *Tuesday, November 6th, 2007*

Location: Lawrence Technological University
21000 West Ten Mile Road
Southfield, MI 48075

Building #5 (Taubman Welcome Center), 4th 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 / \$15 Students

Payment: Cash or Check

RSVP by: **Tuesday, October 30th, 2007 to Chad Kotarba**
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