

Title: Batteries and other Emerging Issues of Electrified Vehicles

Speaker:

Chris Mi, Ph.D,
Senior Member, IEEE
Associate Professor, Electrical & Computer Engineering
Director, DTE Power Electronics Laboratory
University of Michigan – Dearborn, USA

Date: Friday, 3 September 2010

Time: 3:00 pm

Venue: Room 603, Chow Yei Ching Building

Abstract:

In August 2009, President Barak Obama unveiled an unprecedented investment as part of a massive, \$2.4-billion effort to accelerate the manufacturing and deployment of hybrid electric vehicles and new-generation batteries and to save or create thousands of jobs. The goal is to get 1 million plug-in hybrid electric vehicles (PHEVs) on the road by 2015.

Large deployment of electrified vehicles will rely on the success of many innovations, including batteries. There are key obstacles in battery cell manufacturing and pack integration, including safety and life. This talk will look at the recent developments in batteries, controls, and approaches to address battery and control related issues pertaining to the large deployment of electrified vehicles.

Biography of the speaker:

Dr. Chris Mi is Associate Professor of Electrical and Computer Engineering, and Director of DTE Power Electronics Laboratory at the University of Michigan, Dearborn, Michigan, USA. He is also the Chief Technical Officer of 1Power Solutions, Inc. Dr. Mi a leading expert in electric and hybrid vehicles, and has taught tutorials and seminars on the subject of HEV/PHEV for the Society of Automotive Engineers (SAE), the IEEE, NSF, and National Society of Professional Engineers. He delivered the HEV course to major automotive OEMs and suppliers, including GM, Ford, Chrysler, and Delphi. He has offered the tutorial in six countries, including the US, China, Korea, Malaysia, Singapore, and Mexico. Dr. Mi has conducted extensive research in EV/HEV space and has published more than 100 articles and delivered 30 invited talks and keynote speeches, and served as panelists.

Dr. Mi is the recipient of the 2009 Distinguished Research Award of the University of Michigan-Dearborn, 2007 SAE Environmental Excellence in Transportation (E2T) Award for "Innovative Education and Training Program in Electric, Hybrid and Fuel Cell Vehicles," the 2005 Distinguished Teaching Award of the University of Michigan-Dearborn, IEEE Region 4 Outstanding Engineer Award, and IEEE Southeastern Michigan Section Outstanding Professional Award. He is also the recipient of the National Innovation Award (国家发明奖二等奖) and the Government Special Allowance Award (政府特殊津贴) given by the China Central Government. In December 2007, Dr. Mi became a member of the Eta Kappa Nu, the Electrical and Computer Engineering Honor Society, for being "a leader in education and an example of good moral character."

Dr. Mi holds a BS and an MS degree from Northwestern Polytechnical University, Xi'an, China, and a Ph.D degree from the University of Toronto, Toronto, Canada. Dr.

Mi worked with General Electric Company from 2000 to 2001.

Dr. Mi is the associate editor of IEEE Transactions on Vehicular Technology (2009-2011), associate editor of IEEE Transactions on Power Electronics – Letters; editorial board of IET Transactions on Electrical Systems in Transportation, associate editor of Journal of Circuits, Systems, and Computers (2007-2009); the editorial board member of International Journal of Electric and Hybrid Vehicles (2006-2009); a guest editor of IEEE Transactions on Vehicular Technology, Special Issue on Vehicle Power and Propulsion (2009-2010); and guest editor of International Journal of Power Electronics, Special Issue on vehicular Power Electronics and Motor Drives (2009-2010). Dr. Mi served as the Vice Chair (2006 to 2007) and Chair (2008) of the IEEE Southeastern Michigan Section. He was the General Chair of the Fifth IEEE International Vehicle Power and Propulsion Conference to be held in Dearborn, Michigan, September 7-11, 2009. Dr. Mi served on the review panel for the National Science Foundation and the Department of Energy.

1Power is a startup company engaged in PHEV battery management systems, PHEV chargers, high precision battery balancing ICs, and PHEV conversion. The company has worked with DTE Energy, GM, and Chrysler on various PHEV projects, in the area of battery management and control.

Organizer: Prof. K.T. Chau