

More Electric Transportation Systems: Prospects for Energy Storage Systems

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When: Monday, November 12, 2007

Location: Room 105 Othmer Hall

Time: 3:30-5:00 pm

Abstract:

We live in a time of a subtle, but inexorable quest, for fully electrified transportation systems. Concern over our planet becoming an out of control greenhouse is becoming pervasive in professional circles and finally in political arenas. A sizeable portion of the public is also coming to this realization, although it will take longer for the majority opinion to form. Mitigation measures such as driving toward a hydrogen economy as well as pursuing alternative forms of energy have gained a certain momentum. But hydrogen as an energy carrier is not gaining the support most considered essential only 2 or so years ago. What is becoming clearer is that the truly sustainable energy carrier of the future is electrification. More electric – everything! In this presentation we take a look at the situation with CO and the push for alternative energy sources. Then the focus narrows to transportation and why it will need to be mostly electrified by 2050 and what sort of energy storage systems will be needed in support of sustainable electric transportation. This includes discussion on advanced chemistry batteries and carbon-ultracapacitors and their potential for working in combination. The talk will conclude on what the prospects are for electric energy storage.

Bio:

John M. Miller joined Maxwell in December 2005, assuming primary responsibility for developing and promoting ultracapacitor-based solutions for the automotive and heavy vehicle industries. Previously, he spent 18 years in a series of engineering and research and development positions with the Ford Motor Company, where he led several Ford automotive electronics and electric and hybrid drive train development programs before taking early retirement in 2002. Immediately prior to joining Maxwell, he spent three years as an industry consultant, author and guest lecturer. He holds 52 patents and has written more than 145 scientific and technical papers and three books, including *Hybrid Vehicle Propulsion Systems*, which was published in 2003. He holds a BS degree from the University of Arkansas, an MS degree from Southern Methodist University and a doctorate from Michigan State University, all in electrical engineering. He is a Fellow of the IEEE, Editor-in-Chief for *IEEE Power Electronics Society Newsletter*, an IEEE Distinguished Lecturer, and a registered professional engineer.

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