



**IEEE Southeastern Michigan Section
Spring Section Conference & Dinner
Thursday, Mar 29, 2007 5pm – 9pm
Fairlane Center, University of Michigan – Dearborn**

**Power Engineering and Industry Applications (Ch7)
Power Electronics and Industrial Electronics (Ch9)
Power Electronics Distinguished Lecturer**

"Power Electronics and the Next Electrical Energy Revolution"



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Abstract:

This presentation illustrates the emerging second electrical energy revolution – the twenty-first century revolution that is completely changing the original twentieth century electrification revolution. The talk reports that power electronics, the processing of electrical energy through electronic circuits, is the driver behind this revolution. Modern portable devices, new energy resources, the fundamental changes occurring in automobiles, and many other areas have power electronics as a critical enabling technology. The tasks require nonlinear switching circuits, the core technology of power electronics. Examples include electronic motor drives, dc-dc converters, controls for utility distribution and other levels, solar energy power conditioning circuits, "digital power," electric and hybrid automobiles, high-efficiency power supplies, and special semiconductor devices. Emphasis is on the opportunities across power electronics and power engineering based on challenges of power electronics as we enter new energy era.

Biography:

Philip T. Krein received the B.S. degree in electrical engineering and the A.B. degree in economics and business from Lafayette College, Pennsylvania, USA, and the M.S. and Ph.D. degrees in electrical engineering from the University of Illinois, Urbana, USA. He was an engineer with Tektronix, then returned to the University of Illinois. At present, he holds the Grainger Endowed Director's Chair in Electric Machinery and Electromechanics as Director of the Grainger Center for Electric Machinery and Electromechanics. His research interests address all aspects of power electronics, machines, and drives, with emphasis on nonlinear control approaches. He is the author of an undergraduate textbook, *Elements of Power Electronics* (Oxford University Press, 1998), and served as faculty advisor for the University's Advanced Electric Vehicle student teams. From 1997-98, he was a senior Fulbright Scholar at the University of Surrey, Guildford, UK.

Evening Schedule:

4:30pm – 5:00pm Registration and Check-In
5:00pm – 5:45pm First half technical sessions, seven parallel sessions for chapter speaker
5:45pm – 6:00pm Vendor exhibition and networking
6:00pm – 6:45pm Second half technical sessions, seven parallel sessions for chapter speaker
6:45pm – 7:15pm Vendor exhibition and networking
7:15pm – 8:00pm Buffet Dinner from Park Place Catering
7:30pm – 8:00pm Awards program during dinner
8:00pm – 9:00pm Keynote speaker

You get your choice of two (2) of the fourteen technical session, plus networking, vendor showcases, dinner and the keynote speaker.

Registration will be online beginning in February at <http://www.ieee-sem.org>: \$25 for IEEE Members (including members of other ESD Affiliate Council Societies), \$30 non-members, \$10 students/retirees/unemployed. Location is: 19000 Hubbard Drive, Dearborn, Fairlane Center Building, University of Michigan – Dearborn. This event is a technical and professional service to the local IEEE members – this is not a "fundraiser". Contact: Prof. Chris Mi (mi@ieee.org), Conference Chair.