

EMI Suppression Techniques for Power Electronic Systems

This seminar addresses EMI theory and EMI reduction techniques for modern power electronics systems. It covers topics such as generation, measurement and suppression of EMI in single phase and three phase power electronics systems. It is designed for the audience from entry to advanced levels. The seminar would be very valuable to power electronics engineers, EMI/EMC engineers, students in Universities as well as the researchers in EMI area.

Session 1 EMI Fundamentals and Coupling Mechanisms (90 minutes, 50-60 pages)

- Fundamentals of EMI for power electronics systems
- Effects of parasitic parameters in power electronics systems on EMI
- Electric field, magnetic field and related EMI issues in power electronics systems
- EMI suppression techniques for electric field and magnetic field noise couplings

Session 2 EMI Suppression through Component and Filter Design (90 minutes, 50-60 pages)

- EMI suppression components, filters and their high frequency performance
- Improve EMI component and filter's performance with parasitic cancellation techniques
- Transformer design for EMI reduction
- Active and hybrid EMI filters to achieve high power density design

Session 3 EMI Suppression through System Design (90 minutes, 50-60 pages)

- Grounding, parasitic couplings in grounding and the principles of grounding
- EMI due to unbalance and using impedance balancing to reduce EMI
- Shielding and its effectiveness on EMI suppression for power electronics systems

Session 4 EMI in Three-phase Power Electronics, EMI Measurement Principles and Predictions (90 minutes, 50-60 pages)

- EMI in three phase power electronics systems
- Principles of EMI/EMC spectrum analyzers
- Predict EMI spectrum based on the principles of EMC spectrum analyzers
- Single-phase and three-phase EMI noise measurement and diagnosis

Date: Friday, August 28th

Seminar Schedule:

7:30-8:20AM	Registration
8:20-8:30AM	Welcome and Introductions (IEEE PEAL chair or other organizers)
8:30-10:00AM	Session 1
10:00-10:30AM	Refreshment Break
10:30-12:00PM	Session 2
12:00-1:00PM	Lunch
1:00-2:30PM	Session 3
2:30-3:00PM	Refreshment Break
3:00-4:30PM	Session 4

Location:

UDRI River Campus Bldg-Auditorium, Rm. S1700
1700 South Patterson Blvd, Dayton, OH (originally NCR-HQ building)

RSVP

Please reply through the PEAL website's "RSVP to a PEAL event" form (<http://sites.ieee.org/daytonpeal/rsvp/>) by 22 August 2015. Please note this is a generic RSVP form and you must select this EMI training inside the RSVP. Questions should be directed to Kevin Yost (kevin.yost.1@us.af.mil) 937-255-6246.

COST

Free to attend for all. Lunch and refreshments are free for IEEE members, \$10 for non-IEEE members, and \$5 for non-IEEE students. Payable by cash during registration.

Speaker Bio

Dr. Shuo Wang received the Ph.D. degree from Virginia Tech, Blacksburg, VA, in 2005. He has been an associate professor with the Department of Electrical and Computer Engineering, University of Florida, Gainesville, FL, since 2015. From 2010 to 2014, he was with University of Texas at San Antonio, TX, first as an assistant professor and later as an associate professor. From 2009 to 2010, he was a senior design engineer in GE Aviation Systems, OH. From 2005 to 2009, he was a research assistant professor at Virginia Tech.

Dr. Shuo Wang has published more than one hundred IEEE journal and conference papers and holds 7 US patents. He received the Best Transaction Paper Award from the IEEE Power Electronics Society in 2006 and two William M. Portnoy Awards for the papers published in the IEEE Industry Applications Society in 2004 and 2012, respectively. In 2012, he received the prestigious National Science Foundation CAREER Award. He is an Associate Editor for the IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS and a technical program Co-Chair for IEEE 2014 International Electric Vehicle Conference.