

Spring 2015 Seminar Series

Presented by the ECE Division

ADVANCED ENERGY CONVERSION SYSTEMS: CHALLENGES AND SOLUTIONS

WEDNESDAY MARCH 18, 2015

3:00 PM – HEC 450

Present global concerns regarding energy and environmental issues call for efficient and reliable energy conversion systems. In this talk an overview of the recent research activities in the Power Electronics Laboratory at RPI will be presented. This research covers a wide array of topics in the field of power and energy including power electronic converters for energy harvesting, distributed energy systems, solid-state lighting, and medium-voltage dc systems as well as electric drives and machines for ship-board power systems, avionics and hybrid electric vehicles. In the first part of this talk a summary of our research on power electronic converters as a main building block of various energy systems will be described. Recently introduced topologies of single-stage ac-dc converters and multi-phase dc-dc converters for various applications will be covered. In the second part of the talk, the design and control of high performance electric drives and electromechanical energy converters will be explained. Advances in power electronics and digital signal processing facilitate a move away from the standard off-the-shelf electric machines and drives to new high performance ones in specific applications. Integrated design of electric drive systems will be discussed and control architectures to operate the system at its maximum possible performance will be covered.

DR. LEILA PARSA

Rensselaer Polytechnic Institute



Dr. Leila Parsa received the Ph.D. degree in Electrical Engineering from Texas A&M University, College Station TX. In 2005, she joined the Department of Electrical, Computer and Systems Engineering at Rensselaer Polytechnic Institute, Troy, NY where she is currently an Associate Professor. Her research interests are in design, analysis and control of power electronic converters and electromechanical energy converters for various applications. Dr. Parsa is the recipient of the 2010 RPI School of Engineering Research Excellence Award, the 2009 Office of Naval Research Young Investigator Award, the 2007 IEEE Industry Applications Society Outstanding Young Member Award, and 2006 IEEE Industry Applications Society Transactions

Paper Award. She has been involved on technical program committees of several IEEE conferences. Dr. Parsa has served as chair of Electric Machines technical subcommittee of the IEEE Industrial Electronics Society in 2011 and 2012.

