

Power Area Graduate Seminar

Monday, February 4, at Noon
Room 104 Emerson Electric Company Hall

Multiple Reference Frame Theory for Harmonic Compensation via Doubly Fed Induction Generators (DFIG)

Presented by Omkar Ghatpande, Missouri S&T

Abstract: Due to recent widespread use of harmonic producing non-linear power electronic equipment in industrial applications, has increased the occurrence of harmonic currents in distribution systems. In this seminar a method of harmonic compensation of nonlinear loads for a doubly fed induction generator using a multiple reference frame theory is discussed. The most significant low-order harmonics to be compensated are calculated using a multiple reference frame estimator. This method of measuring and compensating harmonics is straightforward, effective, easily implementable and accurate in mitigation of any harmonic in the system. Simulation results are presented to demonstrate the performance of this proposed method. Currently development of an experimental setup with a 2.2 kW wound-rotor induction machine is under way for laboratory validation.

Biography: Omkar Ghatpande received his BE degree in Electrical Engineering in 2009 from University of Pune, India. From August 2009 to July 2011 he worked as a Solution Development Engineer in Energy Services department at Honeywell Automation India Ltd. Presently, he is pursuing his Master of Science degree at Missouri University of Science and Technology.