

Seminar Talk

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3:00 p.m. KH 224

Title: Advanced Customer System Applications and New Trends in the Smartgrid Environment

Abstract:

The electric power grid was built over 100 years ago based on simple demand and supply requirements in many countries. With emerging technologies, availability of small-scale distributed energy sources, two-way information flow, communication architecture, as well as smart sensing and metering technologies that are being incorporated into the current power grid, various intelligent customer systems can be enabled. This presentation discusses the design and implementation of hardware and software needed to achieve automated demand response features in residential and commercial buildings. These include: (1) Home Energy Management (HEM) system, and (2) Building Energy Management Open-Source Software (BEMOSS) platform. In addition, new trends in the smart grid environment will be discussed. They include (1) Load Disaggregation, (2) Transactive Control Solutions for Smart Cities, and (3) A Blockchain-enabled Peer-to-Peer Energy Trading Platform.

Bio:

Dr. Murat Kuzlu (Senior Member – IEEE) joined Old Dominion University (ODU) of Electrical Engineering Technology Department as an Assistant Professor in 2018. He received his B.Sc., M.Sc., and Ph.D. degrees in Electronics and Telecommunications Engineering in 2001, 2004, and 2010, respectively. From 2005 to 2006, he worked as a Global Network Product Support Engineer at Nortel Networks, Turkey. From 2006 to 2011, he worked at the Energy Institute of TUBITAK-MAM (Scientific and Technological Research Council of Turkey – The Marmara Research Center) as a senior researcher. In 2011, he joined Virginia Tech’s Advanced Research Institute, where he worked as a postdoc and Research Assistant Professor before joining ODU. His research interests include cyber physical systems, smart grid, smart cities, transactive energy, demand response, home and building energy management, smart grid communications, wireless communication, blockchain and embedded systems.