**26th October 2012**

**Video-conference University of Edinburgh – Heriot-Watt University (Temporary Room: PG3.03 from 11.00 – 12.00)**

**Games, Privacy and Distributed Algorithms for the Smart Grid**

**H. Vincent Poor**

**Professor of Electrical Engineering**

**Dean, School of Engineering and Applied Science**

**Princeton University**

Email: [*poor@princeton.edu*](mailto:poor@Princeton.EDU)

***Abstract:*** *Smart grid involves the imposition of an advanced cyber layer atop the physical layer of the electricity grid in order to improve the efficiency and lower the cost of power use and distribution, and to allow for the effective integration of variable energy sources and storage modes into the grid. This cyber-physical setting motivates the application of many techniques from the information and systems sciences to problems arising in the electricity grid, and considerable research effort has been devoted to such application in recent years. This talk will describe recent work on three aspects of this problem: applications of game theory to smart grid design; characterization of the fundamental tradeoff between privacy and utility of information sources arising in the grid; and the design of distributed algorithms for inference and control that are suitable for the topological constraints imposed by the structure of the grid.*

**Biography:** H. Vincent Poor is the Michael Henry Strater University Professor at Princeton University, where he is also the Dean of Engineering and Applied Science. His research interests are primarily in the areas of stochastic analysis, statistical signal processing, and information theory, and their applications in various fields, including wireless networking, social networks and smart grid. Among his publications in these areas is the recent book *Smart Grid Communications and Networking* (Cambridge, 2012). Dr. Poor a member of the U.S. National Academy of Engineering and the U.S. National Academy of Sciences, and a Fellow of the IEEE, the American Academy of Arts and Sciences, and the Royal Academy of Engineering of the U.K. He received a Guggenheim Fellowship in 2002, and the IEEE Education Medal in 2005. Recent recognition of his work includes the 2010 IET Ambrose Fleming Medal, the 2011 IEEE Eric E. Sumner Award, and the 2011 Society Award of the IEEE Signal Processing Society. In 2011 he received the degree D.Sc. *honoris causa* from Edinburgh.