

**Distinguished Lecture Series 2008****Whisper of Radio – Spectrum Sharing  
in Cognitive Radio Networks**

by

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The University of New South Wales, Australia**Date: 13 November 2008, Thursday****Time: 10:30 a.m. – 12:00 noon****Venue: Conference Room, SHIAE****Room 702, 7/F, William M.W. Mong Engg. Bld., CUHK****Abstracts**

Cognitive radio is an agile radio technology which has the potential of dealing with the stringent requirement and scarcity of the radio spectrum by opportunistically utilizing licensed spectrum. Such a revolutionary technology represents a paradigm shift in the design of wireless systems as it will allow the agile and efficient utilization of radio spectrum by offering distributed terminals or radio cells the ability of spectrum sensing, self-adaptation and spectrum sharing. In this talk, a “whispering radio” technique is focused to enable cognitive radio sharing licensed band with primary users and improving spectrum utilization. An overview of cognitive radio technology is first provided and the current research advance and challenges are discussed. Then, a multihop relay based spectrum sharing approach, referred to as “whispering radio” is presented to address the problem of spectrum under-utilization. In particular, power control and routing for multihop relay cognitive networks are discussed. Finally, performance benefits of the “whispering radio” are shown.

**Biography of the Speaker**

**Wei Zhang** received his Bachelor and Master Degrees from Jilin University, China, in 1998 and 2002, respectively, and his PhD degree in Electronic Engineering from The Chinese University of Hong Kong in 2005. He was a Postdoctoral Fellow at Department of Electronic and Computer Engineering, Hong Kong University of Science and Technology in 2006-2007. From 2008, he has been with the School of Electrical Engineering and Telecommunications, The University of New South Wales, where he is now a Senior Lecturer. His current research interests include cognitive radio, cooperative communications, multiuser MIMO and space-time/frequency coding. He received the best paper award at the 50<sup>th</sup> IEEE GLOBECOM, Washington DC in December 2007.

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**ALL ARE WELCOME**

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**For ENQUIRIES: Tel: 3163 4351***\* Light refreshment will be served at 10:15 am before the lecture \**