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**SEMINAR SERIES ON COMPLEX SYSTEMS, NETWORKS, CONTROL AND CHAOS**

**Some issues and challenges in the design of LED lighting power supplies**

**Miss Xiaohui Qu**

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Date and Time: Friday, 12 December 2008, 4:30pm – 5:30pm

Venue: Room **CD634**, Hong Kong Polytechnic University

Reception starts at 4:15pm

(Language: **English**)

**Abstract**

Light-emitting-diode (LED) light sources, which are more compact, capable to change color in real time, less dissipative and more durable than the conventional lamps, are finding many applications in domestic, commercial and industrial environments. However, requirements such as high power factor, long lifetime, accurate current control and high efficiency pose challenges to the design of LED ballast circuits. In this seminar, we will analyze the practical issues to be resolved in LED lighting application and discuss some possible solutions in the design of LED lighting power supplies. Then we will propose an LED ballast circuit for multiple LED lamps with independent brightness control. The new ballast circuit will be verified to satisfy the requirements well.

**About the Speaker**

Miss Qu received the B.Sc. and M.Sc. degrees in electrical engineering from the Nanjing University of Aeronautics and Astronautics, Nanjing, China, in 2003 and 2006, respectively. Currently, she is a Ph.D. candidate in the Department of Electronic and Information Engineering, the Hong Kong Polytechnic University, Hong Kong.

She was an electrical engineer from April to August 2006 with Power System Center, Tyco Electronics Corporation, Shanghai, China. Her main research interests include light color control for LED lighting applications, power-factor-corrected switching regulators, and resonant ballast converters.