

Presents the Summer 2012 EECS Seminar Series

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**“Semiconductor Device Trend and Technology Development”**  
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**ABSTRACT**

As MOSFETs are scaled down to 28 nm and below, power consumption is the major limitation to maintain device performance well. Thus, how to suppress the device's sub-threshold leakage and gate leakage is the most important issue for sub-28nm MOSFETs, especially for high performance/lower power system applications. In order to scale MOSFET further following Moore's law, potential device candidates, such as UTBB, FinFET, and nano-wire transistors, are introduced to replace conventional MOSFET structure. This talk will focus on the semiconductor device trend and related advanced technology development, especially for upcoming 22 nm to 15 nm technology node.

**BIOGRAPHY**

Wen-Kuan Yeh received the Ph. D. degree in electronics engineering from National Chiao-Tung University, Hsin-Chu, Taiwan, in 1996. From 1989 to 1990, he joined Taiwan Semiconductor Manufacturing Corporation (TSMC) Research and Development Division, as an intern to do research in sub- $\mu\text{m}$  CMOS. In 1990 he joined Unite Microelectronic Corporation (UMC) Technology & Process Development Division, as a member of Research Staff to develop Logic, Embedded DRAM, SOI, and 90 nm transistor tech-applications. He is currently a Professor of Electrical Engineering and Dean of Engineering in the National University of Kaohsiung, Taiwan. He has published 2 edited books, over 100 peer reviewed papers, 3 book chapters, and over 80 patent applications. His recent work is in the field of nano-scaled CMOS, SOI MOSFETs, and FinFETs. He serves as a chair of the IEEE EDS Tainan Chapter in Taiwan.