

**Title: Design for Manufacturing**

**Speaker:**

Dr. Martin D.F. Wong  
Department of Electrical and Computer Engineering  
University of Illinois  
Urbana-Champaign

**Date:** Monday, 24 January 2011

**Time:** 2:30 pm

**Venue:** Room 601J, Chow Yei Ching Building

**Abstract:**

With on-chip minimum feature size down to nanometer range, there are substantial challenges to the design and manufacturing of very-large scaled integrated (VLSI) circuits. In the current 45nm technology node, manufacturing process variations have become a major factor that affects circuit performance and could lead to excessive yield loss. This manufacturability problem will get significantly worse in future technology nodes of 32nm/22nm and beyond. In order to cope with manufacturing process variations, a major paradigm shift is required in the way we design VLSI circuits. To handle random variations, we need to develop a new generation of electronic design automation (EDA) software that manipulates statistical random variables rather than deterministic values. To handle systematic variations, we need to develop a new generation of EDA software that understands how these variations are compensated during the down-stream manufacturing steps. In this talk, we give an overview of our contributions in design for manufacturing.

**Biography of the speaker:**

Martin D.F. Wong obtained the Ph.D. degree in Computer Science from the University of Illinois at Urbana-Champaign (UIUC) in January 1987. From 1987 to 2002, he was a faculty member in Computer Science at the University of Texas at Austin. He returned to Illinois in 2002 where he is currently Professor of Electrical and Computer Engineering at UIUC. He has published 380 technical papers and graduated 39 Ph.D. students in the area of electronic design automation (EDA). He

has won a few IEEE/ACM best paper awards in EDA. He has served on numerous technical program committees of leading EDA conferences. He has also served on the editorial boards of IEEE Transactions on Computers, IEEE Transactions on Computer-Aided Design, and ACM Transactions on Design Automation of Electronic Systems. He was an IEEE Distinguished Lecturer in 2005-2006. He is a Fellow of IEEE.

**Organizer:** Dr. N. Wong