



THE COMPUTER ENGINEERING RESEARCH CENTER
THE VLSI SEMINAR SERIES

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Physical Design Automation for Fast and Reliable 3D Circuits

Abstract

The 3D integrated circuit is an emergent technology that vertically stacks multiple die with a die-to-die interconnect. The die-to-die via pitch is very small and provides the possibility of arranging digital functional blocks across multiple die at a very fine level of granularity. This results in a decrease in the overall wire length, which translates into less wire delay and less power. Advances in 3D integration and packaging are undoubtedly gaining momentum and have become of critical interest to the semiconductor community. In this talk, we present our CAD algorithms and tools for the physical design targeting 3D integrated circuits. We perform placement and routing at two levels of design abstraction: microarchitecture and circuit level. Our objective is to optimize performance, power, and size while addressing several important reliability issues such as thermal hot-spot, leakage power, and power-supply noise

Biography

Sung Kyu Lim received the B.S., M.S., and Ph.D. degrees from the Computer Science Department, University of California, Los Angeles (UCLA), in 1994, 1997, and 2000, respectively. From 2000 to 2001, he was a Post-Doctoral Scholar at UCLA, and a Senior Engineer at Aplus Design Technologies, Inc. He joined the School of Electrical and Computer Engineering, Georgia Institute of Technology in 2001. His research focus is on the physical design automation for 3-D circuits, 3-D system-on-packages, microarchitectural physical planning, and field-programmable analog arrays. Dr. Lim received the Design Automation Conference (DAC) Graduate Scholarship in 2003 and the National Science Foundation Faculty Early Career Development (CAREER) Award in 2006. He has been on the Advisory Board of the ACM Special Interest Group on Design Automation (SIGDA) since 2003. He is an Associate Editor of the IEEE Transactions on Very Large Scale Integration Systems (TVLSI) and served as a Guest Editor for the ACM Transactions on Design Automation of Electronic Systems (TODAES). He has served the Technical Program Committee of several ACM and IEEE conferences on electronic design automation.

Thursday, March, 29, 2007, ACES 2.402, 2 pm

Coffee and cookie will be served. For more information about the VLSI Seminar Series, please visit <http://www.cerc.utexas.edu/vlsi-seminar/>