

Design of 3D Specific Systems

GUEST SPEAKER

Prof. Paul Franzon

Professor of Electrical and Computer Engineering,
North Carolina State University, USA

When: **28th June 2011, 3.00 p.m. to 4.00 p.m.**

Where: **Institute of Microelectronics, Singapore**
11 Science Park Road Singapore Science Park II Singapore 117685

Abstract

3D stacking and integration with TSVs can provide significant system advantages in terms of power, scale, cost and performance. This talk will cover what we have learned at NCSU over the past five years putting together CAD flows for 3DIC design and designing multiple 3DIC chips in the Lincoln Labs and Tezzaron 3D processes. These designs focus on two general approaches – vertically partitioned digital systems and miniature sensors. The digital systems investigated focus on DSP applications, mobile graphics and sensors for Food Safety and bio interfacing. Issues to be covered in detail include 3D motivation, system engineering, floorplanning and partitioning, thermal analysis and CAD flow. At NCSU, we have put together a 3D CAD flow intended to take a design from initial system concept to tape-out. This flow relies largely on 2D point tools but several 3D enhancements have been investigated. This flow has been exercised in several MPW runs coordinated by Lincoln Labs and Tezzaron. Finally, outstanding issues in 3D design will be summarized and prioritized.

About the Speaker



Paul D. Franzon is currently a Professor of Electrical and Computer Engineering at North Carolina State University. He earned his Ph.D. from the University of Adelaide, Adelaide, Australia in 1988. He has also worked at AT&T Bell Laboratories, DSTO Australia, Australia Telecom and two companies he cofounded, Communica and LightSpin Technologies. His current interests center on the technology and design of complex systems incorporating VLSI, MEMS, advanced packaging and nano-electronics. He has lead several major efforts and published over 200 papers in these areas. In 1993 he received an NSF Young Investigators Award, in 2001 was selected to join the NCSU Academy of Outstanding Teachers, in 2003, selected as a Distinguished Alumni Professor, and in 2005 won the Alcoa award. He is a Fellow of the IEEE.

Registration

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