

Invitation to December 1, 2010 IEEE/LVS/SSCS Technical Meeting

Featuring: **David M Fried of IBM, East Fishkill, NY**

Topic: **Challenges Facing 32nm and 22nm IC Technologies**

When?

Wednesday, December 1, 2010, beginning at 6:00 PM

NOTE: Different from our usual meeting day!

Where?

Lehigh University, Bethlehem PA

Packard Laboratory

Refreshments in room 324 (Same floor as the lobby)

Meeting and lecture upstairs in room 466.

Who is invited?

Anybody who's interested may attend *as long as they RSVP*, but specific invitations will be extended to:

- IEEE/LVS members (not just SSSC)
- IEEE/LVS student branch members
- Lehigh University Professors and Students
- IEEE/SSCS of neighboring sections
- Local industry engineers and managers, IEEE members or not

RSVP to Ian Rippke: i.a.rippke@ieee.org

No matter who forwards you this invitation, please respond to Ian Rippke at the above link.

NOTE: Different from our usual contact person for RSVPs!

Program

6:00 PM Social Hour in Packard Lab room 324: Sandwiches, Soft Drinks and Cookies.

7:00 PM Announcements, short formal meeting, address by David M Fried of IBM

Topic: Challenges Facing 32nm and 22nm IC Technologies

Abstract

As the semiconductor-industry continues the march to increased circuit density and higher performance, the challenges of nanoscale CMOS have increased exponentially. Limitations loom in the realms of physics, reliability, manufacturing and finance. However, development teams continue to work around these limitations and produce generation after generation of new silicon CMOS every few years. After a brief review of recent developments in semiconductor process and device design, the challenges facing 32nm and 22nm technologies will be presented in detail. Several technological innovations are being put in place for these technologies across the industry, in many cases creating technical divides in the marketplace. The future of chip technology includes a dizzying array of options, all with technical and financial implications. Several of these future technology options will be presented.

Speaker Information

David M. Fried holds a BS ('98), MEng ('99), MS ('03) and PhD ('04), all from Cornell University. He started with IBM in 1999, working in the ASICs test site development team in Burlington, VT. After returning to Cornell to complete his MS/PhD on the Special Studies Plan, David joined the T. J. Watson Research Center, working on aggressively scaled SRAM. In 2004, David led this team to fabricate the world's smallest SRAM bit cell (0.143 μ m²), a record only recently broken by IBM's research team. He then moved to IBM's Semiconductor Research & Development Center (SRDC) in East Fishkill, NY to lead the development of 65nm High-Performance SOI CMOS for IBM's POWER6 and System z10 products. In 2008, David started the SRDC 22nm effort, defining 22SOI technology, intended for use in IBM's Server, Games and ASICs products. David has authored 27 technical publications, holds over 40 US patents and is currently a Senior Technical Staff Member and 22SOI Chief Technologist.