On-Campus

ESD On-Campus at Stanford University

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This year I presented two on-campus seminars at the Stanford Center for Integrated Studies (CIS). These seminars covered an overview of the state-of-the-art issues in ESD design and technology. The first seminar took place during January at the invitation from Prof. Boris Murmann, and it was arranged to address graduate students and faculty. Prof. Murmann is an active researcher in the mixed signal analog designs and his work is focused on the next wave of analog circuit applications from medical devices to exotic robotics. Incidentally, Prof. Murmann gave an excellent invited seminar at the IEW 2011 on this particular topic. ESD is always of a critical consideration as we move forward to complex applications of the future. Bringing the academic research staff to the awareness of ESD sensitivity and the technology challenges is always a win-win situation for all concerned from the industry to the university and invariably to the Association.

The second seminar at the Stanford CIS took place during April and this event was arranged jointly through the IEEE Electron Devices Society (EDS) and Prof. Robert Dutton of Stanford. The logistics of the seminar were kindly coordinated by Dr. Victor Cao (a recent Stanford PhD graduate and now employed at GlobalFoundries) who is a committee member of the Santa Clara Valley EDS Chapter. Prof. Dutton has directed several PhD students, including Dr. Cao and Dr. Steven Beebe, through the years. These graduates have done outstanding research work in ESD modeling and device phenomena. Of course many of the graduates have gone on and are now currently working for semiconductor corporations on technology issues and ESD in particular. This second seminar was attended by the Stanford research students as well as some local industry participants. The main focus of the second seminar was on the ESDA Technology Roadmap.

It is always nice to receive some feedback on such seminars. As Dr. Cao notes:

"The attendees were very delighted to have had this great opportunity to listen to Dr. Duvvury's talk on the most recent topics in ESD. This talk not only demystified the ESD elements for those who are less familiar with this field, but also provided a comprehensive and in-depth coverage of the critical issues for all. Everyone we talked with after the seminar provided enthusiastic feedback and requested the slides for careful learning. Catherine Chang, a graduate student in the Electrical Engineering Department noted: "Dr. Duvvury's talk was very enlightening to me because it highlighted the importance of ESD research to industry, and how much more progress we still need to make to fully understand and prevent it. He presented both the increasing challenge of ESD protection and the possible solutions in a very clear and engaging manner." A recent EE graduate (who now works as a circuit designer in a fabless design house in Santa Clara) commented: "The new (lowered) ESD target levels are truly great news for us. More importantly, Dr. Duvvury thoroughly explained the reasons behind the reduction and provided ample evidence to back up the proposals. That gives us much confidence to consider adopting. I really like the very informative section about system level ESD that I knew little about. There's lots of fascinating issues and will surely lend opportunities to university research and industry collaboration."

The sponsorship of the ESDA Board for the on-campus ESD seminars is very much appreciated by many of the academic institutes. We must continue this activity to bring awareness of the excellent and rewarding opportunities in ESD research.