SE3: Favorite Circuit Design and Testing Mistakes of Starting Engineers

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This special event will focus on typical mistakes that all starting graduate students seem to make when they first start designing circuits. Many of these errors are simple and easily avoided if only they are pre-warned. These errors show up at different phases of design, simulation, layout and testing. Renowned speakers will share their experience and provide examples of their own mistakes!

Panelists:
Thomas H. Lee, *Stanford University, Palo Alto, CA*
Robert Bogdan Staszewski, *University College Dublin, Dublin, Ireland*
Kathleen Philips, *IMEC, Eindhoven, The Netherlands*
Howard C. Luong, *HKUST, Kowloon, Hong Kong, China*
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Panelists:

Thomas H. Lee, *Stanford University, Palo Alto, CA*

Thomas Lee is a Professor of Electrical Engineering at Stanford University. He joined the Stanford faculty in 1994 and founded the Stanford Microwave Integrated Circuits Laboratory. From April 2011 through October 2012, he served as the Director of the Microsystems Technology Office at the Defense Advanced Research Projects Agency (DARPA). He has also co-founded three startups: Matrix Semiconductor, Inc. (acquired by SanDisk), ZeroG Wireless (acquired by Microchip Technology) and Ayla Networks. Dr. Lee received his S.B., S.M. and doctorate of Electrical Engineering from the Massachusetts Institute of Technology. He has written and co-authored numerous books and papers and is widely recognized for his expertise in high performance analog circuit designs and wireless communications technology. He is an IEEE Fellow and has been the recipient of many honors and awards including the United States Secretary of Defense Medal for Exceptional Civilian Service for his service at DARPA. He was also awarded the 2011 Ho-Am Prize in Engineering. He has been granted 65 patents.

Robert Bogdan Staszewski, *University College Dublin, Dublin, Ireland*

R. Bogdan Staszewski received B.S. (summa cum laude), M.S. and PhD from University of Texas at Dallas, USA, in 1991, 1992 and 2002, respectively. From 1991 to 1995 he was with Alcatel in Richardson, Texas. He joined Texas Instruments in Dallas, Texas in 1995. In 1999 he co-started a Digital RF Processor (DRP) group in TI with a mission to invent new digitally intensive approaches to traditional RF functions. In July 2009 he joined Delft University of Technology in the Netherlands where he is currently a part-time Full Professor. Since Sept. 2014 he is a Full Professor at University College Dublin (UCD) in Ireland. He has co-authored 5 books, eight book chapters, 130 journal and 200 conference publications, and holds 210 issued US patents. His research interests include nanoscale CMOS architectures and circuits for frequency synthesizers, transmitters and receivers, as well as quantum computers. He is a co-founder of a startup company Equal1 Labs aiming at building the first practical CMOS quantum computer. He is an IEEE Fellow and a recipient of IEEE Circuits and Systems Industrial Pioneer Award.

Kathleen Philips, *IMEC, Eindhoven, The Netherlands*

Kathleen Philips is VP R&D at imec and General Manager of the imec site, at Holst Centre, The Netherlands. She is leading research roadmaps on Cognitive Sensing, mm-wave sensors, ULP design and Human Augmentation technologies, across teams in The Netherlands and Belgium. Kathleen joined imec in 2007 and has held positions as principal scientist, as program manager for ULP Wireless, and as director IoT. Before that time, she was a senior research scientist at Philips Research for over 12 years. She holds a PhD in electrical engineering from Eindhoven Technical University, The Netherlands and an M.Sc in EE from Katholieke Universiteit Leuven, Belgium. She has authored and co-authored over 60 papers and holds various patents.

Howard C. Luong, *HKUST, Kowloon, Hong Kong, China*

Howard Luong received his BS, MS, and PhD degrees in Electrical Engineering and Computer Sciences (EECS) from University of California at Berkeley. Since September 1994, he has joined the EEE faculty at the Hong Kong University of Science and Technology where he is currently a professor. In 2014, he was appointed as the first MediaTek Endowed Visiting Professor in IC Design at Nanyang Technology University in Singapore. Professor Luong's research interests are in RF and mm-Wave integrated circuits and systems for wireless and portable applications. He was a co-author of three technical books and a book chapter on frequency synthesizers, oscillators, frequency dividers, and switched-opamp switched-capacitor filters. Professor Luong is an IEEE Fellow. He is currently serving as a technical program committee member of IEEE Radio-Frequency Integrated Circuits (RFIC) and as an Associate Editor of IEEE Solid-State Circuits Letters (SSCL). He was an IEEE Solid-State Circuits Society Distinguished Lecturer from 2012 to 2014.

Vadim Ivanov, *Texas Instruments, Tucson, AZ*

MSEE 1980, Ph.D. 1987, both in the USSR. Designed electronic systems and ASICs for naval navigation equipment from 1980 to 1991 in St. Petersburg, Russia and mixed signal ASICs for sensors, GPS/GLONASS receivers and for motor control between 1991 and 1995. Joined Burr Brown, now Texas Instruments, Tucson, in 1996, where worked on the operational, instrumentation, power amplifiers, references and switching and linear voltage regulators, and where he is currently the Operational Amplifier Technologist. Has 108 patents, with more pending, on analog circuit techniques and authored > 30 technical papers and three books: “Power Integrated Amplifiers” (Leningrad, Rumb, 1987), “Analog system design using ASICs” (Leningrad, Rumb, 1988), both in Russian, and “Operational Amplifier Speed and Accuracy Improvement”, Springer, 2004. Member of ESSCIRC technical committee.

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