

Nilanjan Mukherjee / Mentor Graphics

"Testing of Automotive ICs"

The design of autonomous cars is rapidly increasing the electronic content within automotive vehicles. The processing power of ICs needed for ADAS (Advanced Driver Assistance Systems) is growing exponentially, thereby pushing the complexity further. Consequently, automotive ICs that traditionally used to lag a few technology nodes for manufacturing are now using the latest technology nodes (for example 7nm) for designing and productizing such sophisticated SOCs. This tutorial will cover some of the test technologies that are being used for automotive ICs to help achieve very high test quality during manufacturing. It will also cover the in-system test requirements and the test solutions that are being deployed for key-on, key-off, and periodic testing throughout the life-span of the device.

Nilanjan Mukherjee received a B.Tech. (Hons) degree in Electronics & Communication Engineering from IIT, Kharagpur, India, and a Ph.D. degree from McGill University, Canada. Dr. Mukherjee is currently the Engineering Director in the Design-to-Silicon division at Mentor Graphics. At Mentor Graphics, he was a co-inventor of the EDT technology and a lead developer for TestKompress, which is the leading test compression tool in the industry today. Additionally, he is also a co-inventor and helped in productizing the VersaPoint Test Points technology and Low Power Hybrid TestKompress/Logic BIST technology. Prior to joining Mentor Graphics, he worked at Lucent Bell Laboratories in New Jersey.

Dr. Mukherjee has co-authored more than 75 technical papers at various conference proceedings and archival journals. He is a co-inventor of 47 US patents and several international patents. He has received numerous Best Paper awards including the Most Significant Paper Award at ITC 2012, the Best Paper Award at VLSI Design in 2009, the Donald O. Pederson Outstanding Paper Award from the IEEE Circuits and Systems Society in 2006, the Teruhiko Yamada Memorial Best Student Paper Award at ATS 2001, and the Best Paper Award at VTS 1995. Dr. Mukherjee has served on the program committee for various technical conferences and workshops. He has represented Mentor Graphics at the Semiconductor Research Organization (SRC), at the International Technology Roadmap for Semiconductors (ITRS), and as a panelist for National Science Foundation (NSF). Dr. Mukherjee has given several tutorials at DAC, ITC, and VLSI Design conferences, offered short term courses on DFT, and has given talks at various conferences and company sponsored events.