

特別講演のご案内

日時：平成25年10月21日(月) 13:00～14:00

場所：情報工学部 大学院セミナー室7F

講師：Dr. Krishnendu (Krish) Chakrabarty

IEEE Fellow

Professor of Electrical and Computer Engineering

Duke University, USA

講演題目：

Test and Design-for-Testability Solutions for 3D Integrated Circuits

概要：

Despite the numerous benefits offered by 3D integration, testing remains a major obstacle that hinders its widespread adoption. Test techniques and design-for-testability (DfT) solutions for 3D ICs have remained largely unexplored in the research community, even though experts in industry have identified a number of hard problems related to the lack of probe access for wafers, test access to modules in stacked wafers/dies, thermal concerns, and new defects arising from unique processing steps. In this talk, the speaker will present a number of testing and DfT challenges, and describe some of the solutions being advocated for these challenges. The presentation will focus on the following hot topics:

- TSV defects and on-die defects induced by TSV processing, and test generation for TSV-induced stress;
- Pre-bond testing of TSVs and die logic, recent advances in probing, and non-invasive test using DfT;
- Post-bond testing and DfT innovations related to the optimization of die wrappers, test scheduling, and access to dies and inter-die interconnects;
- Fault diagnosis and TSV repair.
- Cost modeling and test-flow selection.

Time permitting, the speaker will also cover additional exciting research problems, and current industry trends for 2.5D/3D IC testing.

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講師プロフィール

Dr. Krishnendu (Krish) Chakrabarty



PhD	University of Michigan	1995
MSE	University of Michigan	1992
B. Tech.	Indian Institute of Technology, Kharagpur, India	1990

Prof. Krishnendu Chakrabarty received the B. Tech. degree from the Indian Institute of Technology, Kharagpur, in 1990, and the M.S.E. and Ph.D. degrees from the University of Michigan, Ann Arbor, in 1992 and 1995, respectively. He is now Professor of Electrical and Computer Engineering at Duke University. He is also a member of the Chair Professor Group (honorary position) in Software Theory at the School of Software, Tsinghua University, Beijing, China.

Prof. Chakrabarty is a recipient of the National Science Foundation Early Faculty (CAREER) award, the Office of Naval Research Young Investigator award, the Humboldt Research Fellowship from the Alexander von Humboldt Foundation, Germany, and several best papers awards at IEEE conferences. His current research projects include: testing and design-for-testability of integrated circuits; digital microfluidics and biochips, circuits and systems based on DNA self-assembly, and wireless sensor networks.

Prof. Chakrabarty is a Fellow of IEEE, a Golden Core Member of the IEEE Computer Society, and a Distinguished Engineer of ACM. He was a 2009 Invitational Fellow of the Japan Society for the Promotion of Science (JSPS). He is a recipient of the 2008 Duke University Graduate School Dean's Award for excellence in mentoring, and the 2010 Capers and Marion McDonald Award for Excellence in Mentoring and Advising, Pratt School of Engineering, Duke University. He served as a Distinguished Visitor of the IEEE Computer Society during 2005-2007, and as a Distinguished Lecturer of the IEEE Circuits and Systems Society during 2006-2007. Currently he serves as an ACM Distinguished Speaker, as well as a Distinguished Visitor of the IEEE Computer Society for 2010-2012. He is the Editor-in-Chief for IEEE Design & Test of Computers and for ACM Journal on Emerging Technologies in Computing Systems. Prof. Chakrabarty is also an Associate Editor of IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, IEEE Transactions on Circuits and Systems II, and IEEE Transactions on Biomedical Circuits and Systems. He serves as an Editor of the Journal of Electronic Testing: Theory and Applications (JETTA).