

特別講演のご案内

日時: 平成24年2月17日(金) 13:30~14:30

場所: 大学院セミナー室5F(新棟)

講師: Prof. Ilija Poljan
Professor and Chair of Computer Engineering,
University of Passau, Passau, Germany

講演題目:

Advanced Test Generation Techniques for Non-Standard Fault Models

概要:

An increasing number of manufacturing defects is not adequately described by traditional fault models such as stuck-at or transition faults. In addition, process, temperature and voltage variations affect detection of defects in nanoscale circuits. Although a variety of accurate defect models are known, they are rarely used in practice. One main drawback of such models is the high complexity of the resulting test generation flow. In addition to gate-level netlist of the circuit, advanced defect models incorporate layout information and technology data.

The presentation will first focus on a modeling of interconnect open defect. Different models balance between preserving accuracy on electrical level while at the same time allowing fast and efficient algorithms that are able to handle large circuits. After that, the impact of process variations on test and the implications on test generation algorithms will be discussed. New ideas on improving conventional approaches such as K longest path generation (KLPG) and novel concepts for variation-aware test will be covered. Finally, modeling of power-supply noise in context of test generation will be considered. In presence of massive statistical process variations, conventional design methodologies are no longer sufficient to guarantee the integrity of the power distribution network. Therefore, they must be complemented by post-silicon validation and manufacturing test which require specific test sequences to be applied. The focus will be on detection of power droop, an intricate phenomenon which may take multiple clock cycle to develop and necessitates accurate switching-activity control.

講師略歴:

Ilija Poljan is a Full Professor and Chair of Computer Engineering at the University of Passau in Germany and currently serves as the Vice Dean of the Faculty of Computer Science and Mathematics. He received his PhD degree in Computer Science from the University of Freiburg in 2003. His research interests are test and robustness of advanced micro and nanoelectronic circuits and systems. He is a Senior Member of IEEE and serves as the Student Activities Chair of the IEEE Test Technology Technical Council (TTTC). He received several awards, including a Best Paper Award at the IEEE DDECS conference 2011. He acted as organizer of several technical meetings and is on Program Committee of a number of conferences including ITC, ETS, DATE, and IOLTS. He is the European Liaison of the Asian Test Symposium 2012 in Niigata.

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