

## TEST COMPRESSION, LOGIC BIST, OR HYBRID?

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Although the main objective of test will remain essentially the same - to ensure high quality low cost manufacturing test – the conditions and consequently also the solutions will undergo a significant evolution over the next couple of years. The key factors, that will have a big impact on how test will continue to evolve, will include: the semiconductor technology, design characteristics, and the design process. This talk will discuss what types of defects will have to be considered to provide the required test quality for the next technology nodes, including 3D, and what matching DFT methods will need to be deployed. Test compression was introduced a decade ago and it very quickly became the predominant DFT methodology. This talk will debate what will be the main DFT methodology for the next decade. Will it be compression, BIST, or a hybrid technology? What other advanced DFT techniques will be required? The designs are getting bigger and increasing often they are done by geographically distributed teams with a generous usage of IP cores, developed internally or acquired commercially. What is the expected impact of that on hierarchical DFT and pattern retargeting? The talk will discuss many of these challenges facing test but it will also highlight new opportunities for the research community.

Dr. Grzegorz Mrugalski is a development engineering manager for the Silicon Test Solutions products at Mentor Graphics Poland. He received the M.S. and Ph.D. degrees in electrical engineering from the Poznan University of Technology, Poland, in 1995 and 2002, respectively. He has published more than 40 research papers in the area of design-for-test focusing on compression and diagnosis. He is a co-inventor of 15 US and 9 international patents. He is a co-

author of the paper introducing Embedded Deterministic Test (EDT™) technology at International Test Conference in 2002 - this technology is used in the first commercial test compression product TestKompress(R). He was the co-recipient of the 2010 Best Paper Award at the IEEE European Test Symposium. He serves as a Program Committee Member of the Design, Automation and Test in Europe Conference.