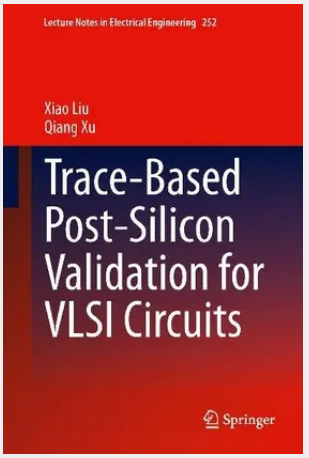
Liu / Xu

Trace-Based Post-Silicon Validation for VLSI Circuits

This book first provides a comprehensive coverage of state-of-the-art validation solutions based on real-time signal tracing to guarantee the correctness of VLSI circuits. The authors discuss several key challenges in post-silicon validation and provide automated solutions that are systematic and cost-effective. A series of automatic tracing solutions and innovative design for debug (DfD) techniques are described, including techniques for trace signal selection for enhancing visibility of functional errors, a multiplexed signal tracing strategy for improving functional error detection, a tracing solution for debugging electrical errors, an interconnection fabric for increasing data bandwidth and supporting multi-core debug, an interconnection fabric design and optimization technique to increase transfer flexibility and a DfD design and associated tracing solution for improving debug efficiency and expanding tracing window. The solutions presented in this book improve the validation quality of VLSI circuits, and ultimately enable the design and fabrication of reliable electronic devices.

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