



1st ed. 2018, XIII, 159 p. 99 illus., 95 illus. in color.

Printed book

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Jens Lienig, Matthias Thiele

Fundamentals of Electromigration-Aware Integrated Circuit Design

- Enables readers to understand and meet challenges of electromigration, including its effects on the reliability of electronic systems
- Accessible to readers of varying backgrounds and experience levels, combining practical application with theoretical underpinnings
- Multiple examples and hands-on instructions for the practical application of countermeasures

The book provides a comprehensive overview of electromigration and its effects on the reliability of electronic circuits. It introduces the physical process of electromigration, which gives the reader the requisite understanding and knowledge for adopting appropriate countermeasures. A comprehensive set of options is presented for modifying the present IC design methodology to prevent electromigration. Finally, the authors show how specific effects can be exploited in present and future technologies to reduce electromigration's negative impact on circuit reliability.

"This unique book ... is a foundational reference for today's design professionals, as well as for the next generation of engineering students."
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"This is a long-awaited book bridging the design and reliability methodologies imperative for generating robust and high-performing semiconductor devices. A deep insight into physics of the electromigration induced degradation of on-chip interconnect components as well as explaining a design specific failure development are beneficial for both the chip-design and materials engineering communities."
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"Good to have this book that walks the readers through a wonderful journey from understanding the basics and background of electromigration in circuit reliability to its physical process and the countermeasures in physical design."
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