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Autore	Menzel Donald H
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Nota di contenuto	Chapter 1 Basic Principles -- Chapter 2 Geometrical, physical and field-scaling impact on MOS transistor behaviour -- Chapter 3 Manufacture of MOS devices -- Chapter 4 CMOS circuit, layout and library design -- Chapter 5 Special circuits, devices and technologies -- Chapter 6 Memories -- Chapter 7 Very Large Scale Integration (VLSI) and ASICs -- Chapter 8 Less power, a hot topic in IC design -- Chapter 9 Robustness of nanometer CMOS designs: signal integrity, variability and reliability -- Chapter 10 Testing, yield, packaging, debug and failure analysis -- Chapter 11 Effects of scaling on MOS IC design and consequences for the roadmap.
Sommario/riassunto	This textbook provides a comprehensive, fully-updated introduction to the essentials of nanometer CMOS integrated circuits. It includes aspects of scaling to even beyond 3nm CMOS technologies and designs. It clearly describes the fundamental CMOS operating principles and presents substantial insight into the various aspects of design, fabrication and application. Coverage includes all associated disciplines of nanometer CMOS ICs, including physics, lithography, technology, design, memories, VLSI, power consumption, variability, reliability and signal integrity, testing, yield, failure analysis, packaging, scaling

trends and road blocks. The text is based upon in-house Philips, NXP Semiconductors, Applied Materials, ASML, IMEC, ST-Ericsson, Infineon, TSMC, etc., courseware, which, to date, has been completed by more than 7000 engineers working in a large variety of the above mentioned disciplines. Provides semester-length textbook, with comprehensive coverage of nanometer CMOS integrated circuits; Provides fully updated overview of all IC disciplines for all semiconductor professionals; Enables readers to gain understanding of the complete development chain, from physics to applications.