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Nota di contenuto	Ch 1: Introduction -- Ch 2: State-of-the-Art ASIC for micro-NMR Transceiver: Architecture and Design Considerations -- Ch 3: A Miniaturized 3-D-MRI Scanner Featuring a High-Voltage SOI ASIC -- Ch 4: A Miniature Multi-Nuclei NMR/MRI Platform with a High-Voltage SOI ASIC -- Ch 5: Non-Invasive Object Reconstruction and Flow Analysis -- Ch 6: Conclusion and Outlook.
Sommario/riassunto	This book describes the complete design of CMOS-based multi-nuclear NMR/MRI microsystems. The authors emphasize optimizing semiconductor chip design to enhance the performance of compact CMOS-based NMR/MRI systems. They also discuss the integrated circuit design of customized modules, such as 3-D gradient controllers specifically for MRI, high-resolution multi-phase generators for advanced composite radio-frequency excitation pulse synthesis, etc. The integration of these specific modules not only drives system

innovation but also expands functionality. Discusses developments in CMOS integrated circuit design for miniaturized NMR/MRI platforms over recent decades; Focuses on key integrated circuit design considerations for transceivers in compact NMR systems; Details the design of application-specific integrated circuits (ASICs) for a miniaturized 3-D MRI platform and a compact multi-nuclei NMR/MRI system, both featuring a portable magnet, for enhanced accessibility.