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Descrizione fisica	1 online resource (265 p.)
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Note generali	Description based upon print version of record.
Nota di contenuto	Introduction -- Chemistry of Conductive Solutions -- Biochemistry of Targets and Probes -- Target/Probe interactions -- Surface Immobilization of Probes -- Nano Technology to prevent Electron Transfer -- Bio/CMOS interface for Label-free Capacitance Sensing -- nanotechnology to enhance electron transfer -- Bio/CMOS interface in Constant Bias.-Bio/CMOS interface in Voltage Scan -- Appendix 1 - Basic Chemistry -- Appendix 2 - Basic Configurations of Operational Amplifiers -- Appendix 3 - The Fourier Theorem -- Appendix 4 - The Fourier and Laplace Transforms.
Sommario/riassunto	The application of CMOS circuits and ASIC VLSI systems to problems in medicine and system biology has led to the emergence of Bio/CMOS Interfaces and Co-Design as an exciting and rapidly growing area of research. The mutual inter-relationships between VLSI-CMOS design and the biophysics of molecules interfacing with silicon and/or onto metals has led to the emergence of the interdisciplinary engineering approach to Bio/CMOS interfaces. This new approach, facilitated by 3D circuit design and nanotechnology, has resulted in new concepts and applications for VLSI systems in the bio-world. This book offers an invaluable reference to the state-of-the-art in Bio/CMOS interfaces. It

describes leading-edge research in the field of CMOS design and VLSI development for applications requiring integration of biological molecules onto the chip. It provides multidisciplinary content ranging from biochemistry to CMOS design in order to address Bio/CMOS interface co-design in bio-sensing applications.

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