1. Record Nr. UNINA9910797065403321

Autore	Zhirnov Victor V.
Titolo	Microsystems for bioelectronics : scaling and performance limits / / Victor V. Zhirnov, Ralph K. Cavin III ; acquisition editor Simon Holt ; designer Greg Harris
Pubbl/distr/stampa	Amsterdam, [Netherlands] : , : William Andrew, , 2015 ©2015
ISBN	0-323-31269-1
Edizione	[Second edition.]
Descrizione fisica	1 online resource (298 p.)
Collana	Micro and Nano Technologies
Disciplina	610.28
Soggetti	Medical electronics Nanomedicine Bioelectronics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Cover; Title Page; Copyright Page; Contents; Preface-Second Edition; Chapter 1 - The nanomorphic cell: atomic-level limits of computing; List of Acronyms; 1.1 - Introduction; 1.2 - Electronic Scaling; 1.3 - Nanomorphic Cell: Atomic Level Limits of Computing; 1.4 - The Nanomorphic Cell vis-a-vis the Living Cell; 1.5 - Cell Parameters: Mass, Size, and Energy; 1.6 - Current Status of Technologies for Autonomous Microsystems; 1.6.1 - Implantable and Ingestible Medical Devices; 1.6.2 - Intelligent Integrated Sensor Systems; 1.7 - Summary; 1.8 - Appendix; References Chapter 2 - Basic physics of ICTList of Acronyms; 2.1 - Introduction; 2.2 - A central concept: Energy barrier; 2.3 - Physical origin of the barrier potential in materials systems; 2.4 - Two-sided barrier; 2.4.1 - Example: Electromechanical switch; 2.5 - Model Case: An Electrical Capacitor; 2.6 - Barrier transitions; 2.7 - Quantum Confinement; 2.8 - Quantum conductance; 2.9 - Electron transport in the presence of barriers; 2.9.1 - Over-barrier transport; 2.9.2 - Tunneling transport; 2.10 - Barriers in semiconductors; 2.10.1 - Metal-semiconductor interfaces; 2.10.2 - pn-junction; 2.11 - Summary ReferencesChapter 3 - Energy in the small: micro-scale energy sources;

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4.3.1 - Distinguishable States4.3.2 - Energy Barrier Framework for the Operating Limits of Binary Switches; A. Limits on barrier height; B. Limits on Size; C. Limits on Speed; D. Combined Effect of Classic and Quantum Errors; 4.3.3 - A summary of device scaling limits; 4.3.4 - Charge-based Binary Logic Switch; 4.3.5 - Charge-based Memory Element; DRAM; SRAM; Floating gate/flash memory; 4.4 - System-level Analysis; 4.4.1 - Tiling Considerations: Device density; 3D Tiling of Flash Memory; 4.4.2 - Energy adjustment for system reliability; 4.4.3 - Models for Connected Binary Switches
A. Juxtaposed Switches

Sommario/riassunto

The advances in microsystems offer new opportunities and capabilities to develop systems for biomedical applications, such as diagnostics and therapy. There is a need for a comprehensive treatment of microsystems and in particular for an understanding of performance limits associated with the shrinking scale of microsystems. The new edition of Microsystems for Bioelectronics addresses those needs and represents a major revision, expansion and advancement of the previous edition. This book considers physical principles and trends in extremely scaled autonomous microsystems such as integrated