

1. Record Nr.	UNINA9910791768903321
Titolo	Transistors [[electronic resource]] : types, materials, and applications / / Benjamin M. Fitzgerald, editor
Pubbl/distr/stampa	Hauppauge, N.Y., : Nova Science Publishers, c2010
ISBN	1-61728-074-7
Descrizione fisica	1 online resource (210 p.)
Collana	Electrical engineering developments
Altri autori (Persone)	Fitzgerald Benjamin M
Disciplina	621.3815/28
Soggetti	Transistors Semiconductors
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 and index.
Nota di contenuto	<p>""TRANSISTORS: TYPES, MATERIALS AND APPLICATIONS "";</p> <p>""TRANSISTORS: TYPES, MATERIALS AND APPLICATIONS ""; ""CONTENTS "";</p> <p>""PREFACE ""; ""CARBON NANOMATERIAL TRANSISTORS AND CIRCUITS""; ""Abstract""; ""Introduction""; ""I. Carbon Nanomaterials""; ""A. Atomic Composition""; ""B. Physical Properties""; ""C. Electrical Properties""; ""II. Carbon Nanotube FETs (CNFETs)""; ""A. General""; ""B. Transistor Types""; ""III. Graphene Nanoribbon FETs (GNRFETs)""; ""IV. Modeling""; ""A. CNFET Modeling""; ""1. SPICE Compatible MOSFET Models""; ""2. SBFET Models""; ""B. GNRFET Modeling""; ""V. Logic Gates and Circuit Structures""; ""A. CNFET Logic Structures""; ""B. GNRFET Logic Structures""; ""C. Circuit Structures""; ""VI. Challenges and Opportunities""; ""VII. Conclusion""; ""Acknowledgment""; ""References""; ""ELECTRONIC PROPERTIES AND SELF CONSISTENT SIMULATIONS OF CARBON NANOTUBES IN TRANSISTOR TECHNOLOGY""; ""Abstract""; ""1. Introduction""; ""2. Physical Properties and Classification of Carbon Nanotubes""; ""2.1. Properties of Graphene Structure""; ""2.2. Properties of Carbon Nanotubes""; ""2.3. Electron Wavefunctions in Carbon Nanotubes""; ""3. Calculation of Electronic Properties of Carbon Nanotubes""; ""3.1. Transmission Spectrum and Current Calculation of Nanoa€? Scaled Devices Using Landauer's Formula""; ""3.2. Non-equilibrium Green's Function Formalism for Realistic Calculation of Current-Voltage Relationships of Carbon Nanotubes""; ""3.3. Density Functional</p>

Theory for the Calculation of the Electron Density and Potential Relationship in Carbon Nanotube Devices"; "3.4. DFT and NEGF Simulations of Example Nanotubes"; "3.4.1. Simulations of Semiconductor Nanotubes"; "3.4.2. Simulations of Metallic Nanotubes"

4. Carbon Nanotube Field Effect Transistors, Review of Their Equivalent Circuit Models and Experimental Applications"

5. Conclusion"; "References"; "NANOWIRE FIELD-EFFECT TRANSISTORS"; "Abstract"; "1. Introduction"; "2. Brief Introduction to Nanowire Electronics"; "3. Typical 1-D Nanostructures"; "3.1. Nanorods"; "3.2. Nanowires"; "3.3. Nanotubes"; "3.4. Nanobelts"; "3.5. 1-D nanoscale Heterostructures"; "4. Application of Nanowire Transistors"; "4.1. Sensors"; "4.2. Light-Emitting Diodes and Nanolasers"; "4.3. Single Nanowire Solar Cells"; "4.4. Transparent Electronics"; "5. Conclusion"; "Acknowledgments"; "References"; "OPERATING CHARACTERISTICS OF MOSFETS IN CHAOTIC OSCILLATORS"; "Abstract"; "Introduction"; "Linear Operations"; "Nonlinear Operators: PWL Functions"; "Chaotic Oscillators Design: Chua's Circuit"; "Chaotic Synchronization and Encryption"; "Conclusion"; "Acknowledgments"; "References"; "ON THE VARIATIONAL LINE QUALITIES APPROACH TO STUDY ELECTRICAL CIRCUITS WITH TRANSISTORS"; "Abstract"; "1. Introduction"; "2. Set-valued Ampere-Volt Characteristics"; "2.1. Diode Models"; "2.2. Transistor Models"
