

Nanoelectronics: Nanowires, Molecular **Electronics, and Nanodevices**

By Krzysztof Iniewski



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The latest advances in nanoelectronics

This definitive volume addresses the state of the art in nanoelectronics, covering nanowires, molecular electronics, and nanodevices. Written by global experts in the field, Nanoelectronics discusses cutting-edge techniques and emerging materials, such as carbon nanotubes and quantum dots. This pioneering work offers a comprehensive survey of nanofabrication options for use in nextgeneration technologies.

Nanoelectronics covers:

- Electrical properties of metallic nanowires
- Electromigration defect nucleation in damascene copper interconnect lines
- Carbon nanotube interconnects in CMOS integrated circuits
- Printed organic electronics
- One-dimensional nanostructure-enabled chemical sensing
- Cross-section fabrication and analysis of nanoscale device structures and complex organic electronics
- Microfabrication and applications of nanoparticle-doped conductive polymers
- Single-electron conductivity in organic nanostructures for transistors and memories
- Synthesis of molecular bioelectronic nanostructures
- Nanostructured electrode materials for advanced Li-ion batteries
- Quantum-dot devices based on carbon nanotubes
- Carbon nanotubes as electromechanical actuators
- Low-level nanoscale electrical measurements and ESD
- Nanopackaging

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Editorial Review

About the Author

Krzysztof Iniewski, Ph.D., is managing R&D developments at Redlen Technologies Inc. He is also an Executive Director of CMOS Emerging Technologies Inc. Dr. Iniewski has published more than 100 research papers in international journals, holds 18 international patents, and has coauthored or edited several books on VLSI circuits.

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