



エルゼビアから書籍のご案内

半導体科学技術全書(全6巻)

Comprehensive Semiconductor Science and Technology, 6-Volume Set

Edited by

Pallab Bhattacharya, College of Engineering,
University of Michigan, USA

Roberto Fornari, Leibniz Institute for Crystal
Growth, Berlin, Germany & Physics, Institute Humboldt
Univ., Berlin, Germany

Hiroshi Kamimura, Department of Applied
Physics, Tokyo University of Science, Japan

2011年
3月
好評発売中

ISBN : 978-0-444-53143-8

装丁 : Hardcover / Page : Approx. 3,500 / 2011年3月刊行

出版記念特価 : US\$2,130.00 (出版後3ヶ月間有効)

定価 : US\$2,655.00

*出版時期及び価格につきましては、予告なく変更となる場合がございます。
予めご了承ください。



Meet the Editors



Pallab Bhattacharya,

College of Engineering,
University of Michigan, USA



Roberto Fornari,

Leibniz Institute for Crystal
Growth, Berlin, Germany &
Physics, Institute Humboldt
Univ., Berlin, Germany



Hiroshi Kamimura,

Hiroshi Kamimura, Department
of Applied Physics, Tokyo
University of Science, Japan

TABLE OF CONTENTS

Volume 1: Physics and Fundamental Theory

- Electrons in Semiconductors: Empirical and ab initio Pseudopotential Theories
- Ab initio Theories of the Structural, Electronic, and Optical Properties of Semiconductors: Bulk Crystals to Nanostructures
- Impurity Bands in Group-IV Semiconductors
- Atomic Structures and Electronic Properties of Semiconductor Interfaces
- Integer Quantum Hall Effect
- Fractional Quantum Hall Effect and Composite Fermions
- Spin Hall Effect
- Ballistic Transport in 1D GaAs/AlGaAs Heterostructures
- Thermal Conductivity and Thermoelectric Power of Semiconductors
- Electronic States and Transport Properties of Carbon Crystalline: Graphene, Nanotube, and Graphite
- Angle-Resolved Photoemission Spectroscopy of Graphene, Graphite, and Related Compounds
- Theory of Superconductivity in Graphite Intercalation Compounds

Volume 2: Physics and Fundamental Theory

- Electronic States and Transport in Quantum-Dots
- Control Over Single Electron Spins in Quantum-Dots
- Contact Hyperfine Interactions in Semiconductor Heterostructures
- Semimagnetic Semiconductors
- Optical Properties of Semiconductors
- Light Emission from Silicon Nanoparticles and Related Materials
- High-Density Excitons in Semiconductors
- Magneto-Spectroscopy of Semiconductors
- Bloch Oscillations and Ultrafast Coherent Optical Phenomena
- Optically Controlled Semiconductor Spin Qubits and Indistinguishable Single Photons for Quantum Information Processing

Volume 3: Materials, Preparation, and Properties

- Bulk Crystal Growth of Semiconductors: An Overview
- Bulk Growth of Crystals of III-V Compound Semiconductors
- Fundamentals and Engineering of the Czochralski Growth of Semiconductor Silicon Crystals
- Growth of Cd_{0.9}Zn_{0.1}Te Bulk Crystals
- Sublimation Epitaxial Growth of Hexagonal and Cubic SiC
- Growth of Bulk GaN Crystals
- Growth of Bulk AlN Crystals
- Growth of Bulk ZnO
- Organometallic Vapor Phase Epitaxial Growth of Group III Nitrides
- ZnO Epitaxial Growth
- Nanostructures of Metal Oxides
- Molecular Beam Epitaxy: An Overview
- Growth of Low-Dimensional Semiconductors Structures

Volume 4: Materials, Preparation, and Properties

- Integration of Dissimilar Materials
- Ion Implantation in Group III Nitrides
- Contacts to Wide-Band-Gap Semiconductors
- Formation of Ultra-Shallow Junctions

New High-K Materials for CMOS Applications

- Ferroelectric Thin Layers
- Amorphous and Glassy Semiconducting Chalcogenides
- Scanning Tunneling Microscopy and Spectroscopy of Semiconductor Materials
- Atomic Resolution Characterization of Semiconductor Materials by Aberration-Corrected Transmission Electron Microscopy
- Assessment of Semiconductors by Scanning Electron Microscopy Techniques
- Characterization of Semiconductors by X-Ray Diffraction and Topography
- Electronic Energy Levels in Group-III Nitrides
- Organic Semiconductors

Volume 5: Devices and Applications

- SiGe/Si Heterojunction Bipolar Transistors and Circuits
- Silicon MOSFETs for ULSI: Scaling CMOS to Nanoscale
- GaAs- and InP-Based High-Electron-Mobility Transistors
- High-Speed InP-Based Heterojunction Bipolar Transistors
- Negative Differential Resistance Devices and Circuits
- GaN-Based Transistors for High-Frequency Applications
- GaN- and SiC-Based Power Devices
- Silicon Single Electron Transistors Operating at Room Temperature and Their Applications
- Electronics with Molecules
- Electronic and Optoelectronic Properties and Applications of Carbon Nanotubes
- Micro- and Nanostructured Semiconductor Materials for Flexible and Stretchable Electronics
- MEMS-Based Sensors
- III-V Compound Avalanche Photodiodes
- Disordering of Quantum Structures for Optoelectronic Device Integration
- Quantum-Well Lasers and Their Applications
- Quantum Cascade Lasers
- Slow and Fast Light in Quantum-Well and Quantum-Dot Semiconductor Optical Amplifiers

Volume 6: Devices and Applications

- III-Nitride-Based Short-Wavelength Ultraviolet Light Sources
- Nitride-Based LEDs and Superluminescent LEDs
- Electronic and Optoelectronic Devices Based on Semiconducting Zinc Oxide
- Molecular Beam Epitaxy of HgCdTe Materials and Detectors
- Quantum-Well Infrared Photodetectors and Arrays
- InAs/(In)GaSb Type II Strained Layer Superlattice Detectors
- Terahertz Detection Devices
- Amorphous and Nanocrystalline Silicon Solar Cells and Modules
- Quantum-Dot Lasers: Physics and Applications
- High-Performance Quantum-Dot Lasers
- Quantum-Dot Infrared Photodetectors
- Photonic Crystal Microcavity Light Sources
- Photonic Crystal Waveguides and Filters
- Spintronic Devices Based on Semiconductors
- Spin-Based Semiconductor Heterostructure Devices
- Spin-Polarized Transport and Spintronic Devices

Full content is available at:

<http://www.elsevierdirect.com/semiconductor>

内容に関するご照会、資料のご請求は下記弊社へご用命ください。

エルゼビア・ジャパン株式会社

〒106-0044 東京都港区東麻布1-9-15 東麻布1丁目ビル4階

◆オンライン版 (ScienceDirect)

電子図書館サービス <http://japan.elsevier.com/products/sd/books/>
Tel. 03-5561-5034 Fax. 03-5561-5047 E-mail: jp.dls@elsevier.com

※ご注文は図書館を通してお願いいたします。

◆冊子体

S&T Books <http://japan.elsevier.com/products/books/>
Tel. 03-5561-1051 Fax. 03-5561-5047 E-mail: jp.stbooks@elsevier.com

※ご注文は洋書籍取扱書店にお願いいたします。