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Silicon Heterostructure HANDBOOK

Materials, Fabrication, Devices, Circuits, and Applications of SiGe and Si Strained-Layer Epitaxy

Edited by JOHN D. CRESSLER • GEORGIA INSTITUTE OF TECHNOLOGY, ATLANTA, USA

A COMPREHENSIVE AND UP-TO-DATE GUIDE TO ALL ASPECTS OF SILICON HETEROSTRUCTURES

An extraordinary combination of material science, manufacturing processes, and innovative thinking spurred the development of SiGe heterojunction devices that offer a wide array of functions, unprecedented levels of performance, and low manufacturing costs. While there are many books on specific aspects of Si heterostructures, the **Silicon Heterostructure Handbook: Materials, Fabrication, Devices, Circuits, and Applications of SiGe and Si Strained-Layer Epitaxy** is the first book to bring all aspects together in a single source.

Featuring broad, comprehensive, and in-depth discussion, this handbook distills the current state of the field in areas ranging from materials to fabrication, devices, CAD, circuits, and applications. The editor includes "snapshots" of the industrial state-of-the-art for devices and circuits, presenting a novel perspective for comparing the present status with future directions in the field. With each chapter contributed by expert authors from leading industrial and research institutions worldwide, the book is unequalled not only in breadth of scope, but also in depth of coverage, timeliness of results, and authority of references. It also includes a foreword by Dr. Bernard S. Meyerson, a pioneer in SiGe technology.

Containing nearly 1000 figures along with valuable appendices, the **Silicon Heterostructure Handbook** authoritatively surveys materials, fabrication, device physics, transistor optimization, optoelectronics components, measurement, compact modeling, circuit design, and device simulation.

FEATURES

- Provides broad, comprehensive, in-depth, and authoritative coverage of the current state of the field
- Features a global "who's who" of expert contributors, each from a leading industrial or research organization from around the world
- Presents up-to-date research results, a comprehensive list of seminal references, and state-of-the-art devices and circuits
- Includes a foreword by Dr. Bernard S. Meyerson, nearly 1000 figures, and indispensable appendices

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