Semiconductor Optoelectronics: Devices and Structures. 1997 The first live introduction to semiconductor optoelectronics in this book provides an accessible, well-organized overview of optoelectronics that explains basic principles.Concepts keywords with an extensive overview of key concepts such as: principles of optoelectronics, fundamental concepts, and semiconductor optoelectronics, carrier transport properties, optical properties, and junction devices. The text focuses on a thorough understanding of the basic principles and applications of optoelectronics, with detailed explanations of the fundamental concepts and practical applications. It also provides a comprehensive overview of the latest developments in the field of optoelectronics, with up-to-date information on the latest research and technology. Additionally, the book includes a wealth of practical examples and case studies to help readers understand the real-world applications of optoelectronics.

Molecular Beam Epitaxy (MBE) and Metal Organic Vapor Phase Epitaxy (MOVPE). 2001 The book reviews fundamental concepts of Molecular Beam Epitaxy (MBE) technology and its applications, as well as state-of-the-art MBE technology and MOVPE applications. MBE is an essential tool for the growth of high-quality semiconductor films and is extensively used in the fabrication of modern electronic and optoelectronic devices. The book is a comprehensive guide to the fundamentals of MBE and MOVPE, providing a thorough understanding of the principles and applications of these technologies. It covers the growth of different compounds and describes their application to the fabrication of electronic and opto-electronic devices. The authors study the historical development of all these systems. The text gives a detailed description of optical fibre waveguides, optical fibre cables and their characteristics, manufacturing process and drawing of optical fibres. In addition, it deals with photon sources, photon detectors, fibre optics and the wide variety of applications of optical fibres. The Physics of Semiconductor Devices. 1999 The text gives a detailed description of the field of semiconductor devices, covering the fundamentals of semiconductors, VLSI technology, optoelectronics, sensors, photovoltaics, crystal growth, epitaxy and characterization, graphene and other 2D materials and organic semiconductors. The Physics of Semiconductor Devices is a comprehensive guide to the fundamentals of semiconductors, VLSI technology, optoelectronics, sensors, photovoltaics, crystal growth, epitaxy and characterization, graphene and other 2D materials and organic semiconductors. The book is an essential reference for researchers and engineers working in the field of semiconductor devices.

Electronic properties. Optical properties. Modulation doping. and devices. 1997 The book reviews the electronic and optical properties of semiconductors, including their fundamental aspects, such as band structure, carrier transport, and optical transitions. It also covers advanced topics, such as quantum confinement effects and optoelectronic devices. The book is a comprehensive guide to the electronic and optical properties of semiconductors, providing a thorough understanding of the basic principles and applications of these properties. It also provides a wealth of practical examples and case studies to help readers understand the real-world applications of electronic and optical properties.

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The Physics of Stars, Second Edition, is a concise introduction to the properties of stellar interiors and consequently the structure and evolution of stars. Through emphasizing the basic physics, simple and uncomplicated theoretical models are used to illustrate clearly the connections between fundamental physics and stellar properties. This text does not aim to be encyclopedic, rather it seeks to focus on the most interesting and important aspects of stellar structure, evolution and cosmology. In the Second Edition, a new chapter on astrophotonics has been added, along with a list of classical textbooks and early student problems. There is also new material on the Hertzsprung-Russell diagram, as well as a general updating of the late 20th century. It includes numerous problems at the end of each chapter aimed at both testing and extending student’s knowledge.

Delta-doping of Semiconductors

C. F.Schubert 1986-03-14 Delta-doping profiles are a key element in the development of modern semiconductor technology. This book is the first to give a comprehensive review of the theory, fabrication, characterization, and device applications of abrupt, shallow, and narrow delta-doping profiles in semiconductors. After an introductory chapter on delta-doping profiles, the book then derives the fabrication of abrupt delta-doping profiles. Finally, the book presents chapters on the characterization of narrow delta-doping profiles. The latter part of the book deals with specific devices. The book will be of great interest to graduate students, researchers, and engineers in the fields of semiconductor physics and microelectronics engineering.

Recent Advances in Photovoltaics

Meera Ramrakhiani 2017-10-01 The ever growing demand for clean energy potentially can be met by solar-to-electrical energy conversion. This book on “Recent Advances in Photovoltaics” presents a comprehensive overview of solar energy research and developments in the field of photovoltaics and solar cells. It starts with the basic energy and photovoltaic principles of solar conversion and gives an overview of solar cells. The coverage for each technology is balanced, with emphasis on recent advances and researching the potential of this technology to power the future. This book is a comprehensive resource for researchers, engineers, scientists, students, researchers, graduate students, and electrical and electronics engineers in the field of solar energy, photovoltaics applications, and related fields. It also includes numerous references, reviews, and case studies on various aspects of photovoltaics.

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