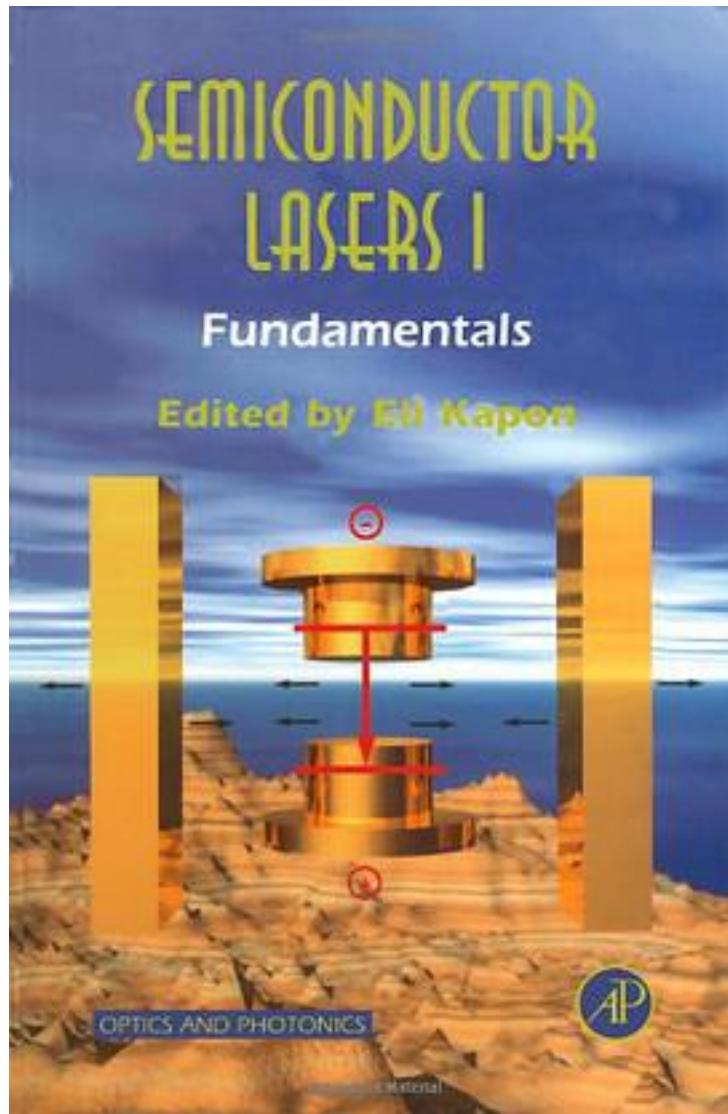


Semiconductor Lasers I



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This book covers the device physics of semiconductor lasers in five chapters written by recognized experts in this field. The volume begins by introducing the basic mechanisms of optical gain in semiconductors and the role of quantum confinement in modern quantum well diode lasers. Subsequent chapters treat the effects of built-in strain, one of the important recent advances in the technology of these lasers, and the physical mechanisms underlying the dynamics and high speed modulation of these devices. The book concludes with chapters addressing the control of photon states in squeezed-light and microcavity structures, and electron states in low dimensional quantum wire and quantum dot lasers. The book offers useful information for both readers unfamiliar with semiconductor lasers, through the introductory parts of each chapter, as well as a state-of-the-art discussion of some of the most advanced semiconductor laser structures, intended for readers engaged in research in this field. This book may also serve as an introduction for the companion volume, "Semiconductor Lasers II: Materials and Structures", which presents further details on the different material systems and laser structures used for achieving specific diode laser performance features. It introduces the reader to the basics of semiconductor lasers. It covers the fundamentals of lasing in semiconductors, including quantum confined and microcavity structures. It is beneficial to readers interested in the more general aspects of semiconductor physics and optoelectronic devices, such as quantum confined heterostructures and integrated optics. Each chapter contains a thorough introduction to the topic geared toward the non-expert, followed by an in-depth discussion of current technology and future trends. It is useful for professionals engaged in research and development. It contains numerous schematic and data-containing illustrations.

作者介绍:

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