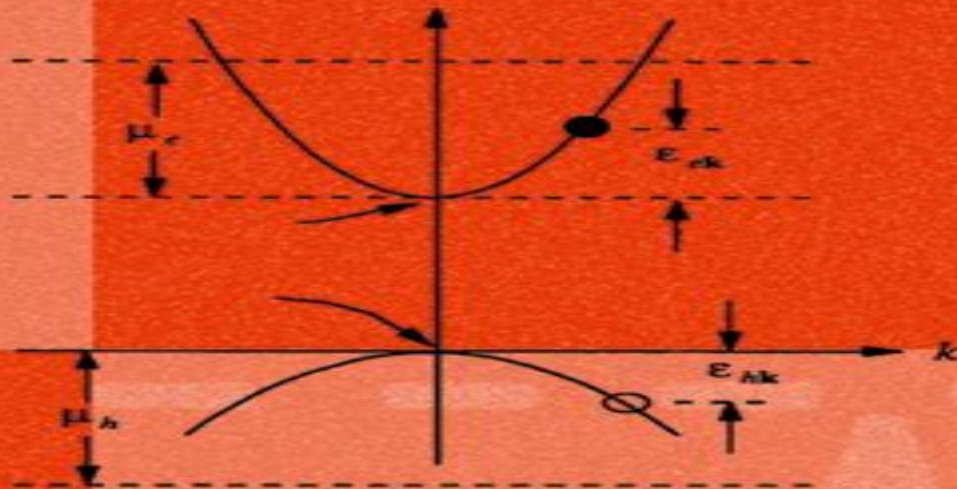


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# Semiconductor – Laser Fundamentals

Physics of the Gain Materials



Springer

# Semiconductorlaser Fundamentals Physics Of The Gain Materials

**Weng W. Chow,Stephan W. Koch**



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background to fabrication modeling and applications Nearly 100 leading scientists from industry and academia were selected to write the handbook's chapters which were conceived for professionals and practitioners material scientists physicists and electrical engineers working at universities industrial R D and manufacturers Starting from the description of the relevant technological aspects and fabrication steps the handbook proceeds with a section fully devoted to the main conventional semiconductor devices like e g bipolar transistors and MOS capacitors and transistors used in the production of the standard integrated circuits and the corresponding physical models In the subsequent chapters the scaling issues of the semiconductor device technology are addressed followed by the description of novel concept based semiconductor devices The last section illustrates the numerical simulation methods ranging from the fabrication processes to the device performances Each chapter is self contained and refers to related topics treated in other chapters when necessary so that the reader interested in a specific subject can easily identify a personal reading path through the vast contents of the handbook

*Contemporary Optoelectronics* Oleksiy Shulika,Igor Sukhoivanov,2015-09-11 This book presents a collection of extended contributions on the physics and application of optoelectronic materials and metamaterials The book is divided into three parts respectively covering materials metamaterials and optoelectronic devices Individual chapters cover topics including phonon polariton interaction semiconductor and nonlinear organic materials metallic dielectric and gyrotropic metamaterials singular optics parity time symmetry nonlinear plasmonics microstructured optical fibers passive nonlinear shaping of ultrashort pulses and pulse preserving supercontinuum generation The book contains both experimental and theoretical studies and each contribution is a self contained exposition of a particular topic featuring an extensive reference list The book will be a useful resource for graduate and postgraduate students researchers and engineers involved in optoelectronics photonics quantum electronics optics and adjacent areas of science and technology     **Applied Nanophotonics** Sergey V. Gaponenko,Hilmi Volkan Demir,2019 An accessible yet rigorous introduction to nanophotonics covering basic principles technology and applications in lighting lasers and photovoltaics Providing a wealth of information on materials and devices and over 150 color figures it is the go to guide for students in electrical engineering taking courses in nanophotonics

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**Optoelectronics and Physics**

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nitrides are due to their unique optical properties and characterizations of III nitrides Much information which is critical to the design and improvement of optoelectronic devices based on III nitrides has been obtained in the last several years This is the second of a two part Volume in the series Optoelectronic Properties of Semiconductors and Superlattices Part II consists of chapters with emphasis on the optical spectroscopy of highly excited group III nitrides theoretical calculations and experimental measurements of optical constants of III nitrides The remaining five chapters focus on the relationships and properties of GaN and InGaN as relating to III Nitrides This unique volume provides a comprehensive review and introduction of the defects and structural properties of GaN and related compounds for newcomers to the field and will be a stimulus to further advances for experienced researchers The chapters contained in this volume constitutes a representative sampling of the broad range of research on nitride semiconductor materials and defect issues currently being pursued in academic government and industrial laboratories worldwide

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