DESCRIPTION

Advances in optical fibre based communications systems have played a crucial role in the development of the information highway. By offering a single mode oscillation and narrow spectral output, distributed feedback (DFB) semiconductor laser diodes offer excellent optical light sources as well as optical filters for fibre based communications and dense wavelength division multiplexing (DWDM) systems. This comprehensive text focuses on the basic working principles of DFB laser diodes and optical filters and details the development of a new technique for enhanced system performance.

• Considers the optical waveguiding characteristics and properties of semiconductor materials and the physics of DFB semiconductor lasers.

• Presents a powerful modelling technique based on the transfer matrix method which can be used to improve the design of laser diodes, optical fibres and amplifiers.

• Examines the effect of the various corrugation shapes on the coupling coefficients and lasing characteristics of DFB laser diodes.

• Technical advice to improve immunity against the spatial hole burning effect.

• Extensive referencing throughout and a comprehensive glossary of symbols and abbreviations.

• Suitable for both introductory and advanced levels
This is an indispensable textbook for undergraduate and postgraduate students of electrical and electronic engineering and physics as it consolidates their knowledge in this rapidly growing field. As a technical guide for the structural design of DFB laser diodes and optical filters, the book will serve as an invaluable reference for researchers in opto-electronics, and semiconductor device physics.

ABOUT THE AUTHOR

Dr. H. Ghafouri-Shiraz is the author of Distributed Feedback Laser Diodes and Optical Tunable Filters, published by Wiley.

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