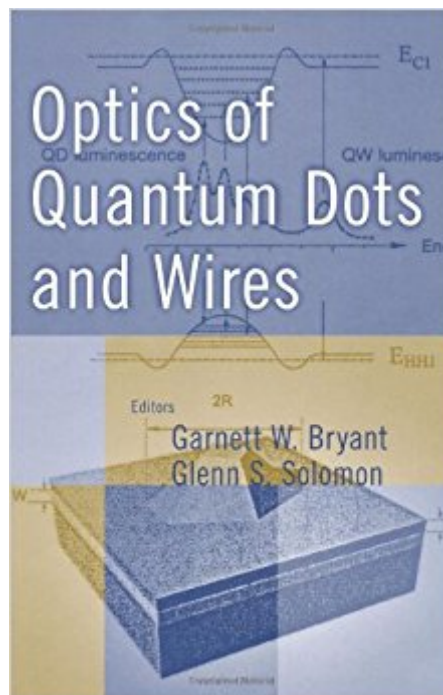




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Optics Of Quantum Dots And Wires (Artech House Solid-State Technology Library)



Synopsis

Quantum technology is the key to next-generation fiber optic and laser equipment. This cutting-edge book is an in-depth examination of how this groundbreaking technology is being manufactured and used in optical devices. A panel of leading experts has been assembled to discuss practical design and application issues as well as vanguard research. The book presents a solid tutorial that brings optics and material engineers quickly up to speed on the optical properties of quantum dots and wires. It includes a detailed survey of current fabrication techniques, placing special focus on bottom-up growth methods that have the most potential for fabricating atomically precise structures.

Book Information

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Customer Reviews

Garnett W. Bryant is a physicist with the National Institute of Standards and Technology. He holds a Ph.D. in physics from Indiana University and a B.S. in physics for the University of Kentucky. Glenn S. Solomon is an assistant professor at Stanford University. He holds a Ph.D. in material science and engineering and a M.S.E. in electrical engineering both from Stanford University.

In the late 1970's the physics and engineering came together to enable the construction of a new generation of optoelectronic devices with enhanced performance such as the quantum well lasers. The physical theory said that this could be done and the mechanical assembly of semiconductors

using the epitaxial growth of planar structures which enabled monolayer thickness made the devices practical. Enhancement of the techniques since has driven down the price of components dramatically downward (the low price of CD-ROM readers and players is the result). While the thickness of the layers has been easy to control, the other two dimensions has proven much more difficult. In the past few years, new techniques have come into being that offer great promise in the fabrication of devices that are not planar (two dimensional) but linear (one dimensional - a wire) or even a single dot (of almost no dimension). This book, edited by Dr. Glenn Solomon of Stanford and Dr. Garnett Bryant of NIST researchers from around the world have contributed chapters that cover the state of the art in how quantum dots and wires are fabricated and applied to optics. This is as cutting-edge a book on the subject as is possible to put together today.

An excellent source of information pertaining to design, fabrication, and testing of quantum dot structures. It includes detailed explanation of the phenomenon that is responsible for the quantum effects. This is what I have been searching for and I am glad I got it! If you deal with Quantum Wells, Dots, Wires and work in the nano-tech field with lasers, modulators, LEDS etc, don't think twice about grabbing this book!

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