

PAUL HARRISON • ALEX VALAVANIS

Quantum Wells, Wires and Dots

4th Edition

Theoretical and Computational Physics
of Semiconductor Nanostructures

WILEY

Resumo de Quantum Wells, Wires and Dots: Theoretical and Computational Physics of Semiconductor Nanostructures

"Quantum Wells, Wires and Dots" provides all the essential information, both theoretical and computational, to develop an understanding of the electronic, optical and transport properties of these semiconductor nanostructures. The book will lead the reader through comprehensive explanations and mathematical derivations to the point where they can design semiconductor nanostructures with the required electronic and optical properties for exploitation in these technologies.

This fully revised and updated 4th edition features new sections that incorporate modern techniques and extensive new material including: - Properties of non-parabolic energy bands - Matrix solutions of the Poisson and Schrödinger equations - Critical thickness of strained materials - Carrier scattering by interface roughness, alloy disorder and impurities - Density matrix transport modelling - Thermal modelling Written by well-known authors in the field of semiconductor nanostructures and quantum optoelectronics, this user-friendly guide is presented in a lucid style with easy to follow steps, illustrative examples and questions and computational problems in each chapter to help the reader build solid foundations of understanding to a level where they can initiate their own theoretical investigations.

Suitable for postgraduate students of semiconductor and condensed matter physics, the book is essential to all those researching in academic and industrial laboratories worldwide.

[Acesse aqui a versão completa deste livro](#)