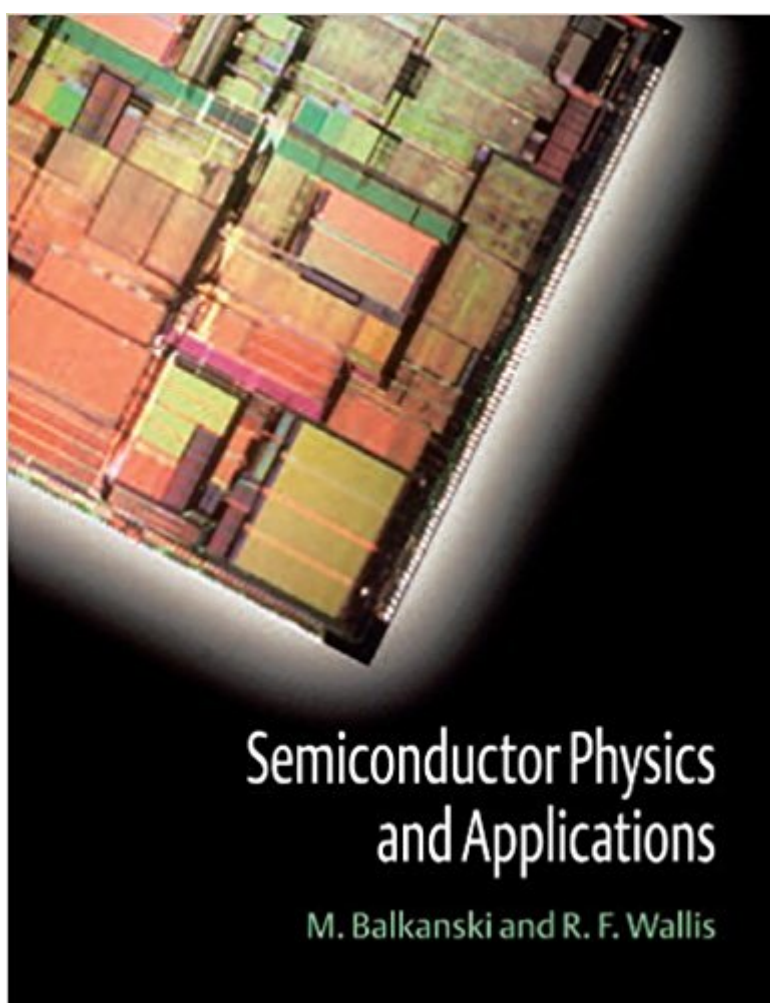


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Semiconductor Physics And Applications (Series On Semiconductor Science And Technology)



Synopsis

This textbook combines a thorough theoretical treatment of the basic physics of semiconductors with applications to practical devices by putting special emphasis on the physical principles upon which these devices operate. Topics treated are the detailed band structure of semiconductors, the effect of impurities on electronic states, and semiconductor statistics. Also discussed are lattice dynamical, transport, and surface properties as well as optical, magneto-optical, and electro-optical properties. The applied part of the book treats p-n junctions, bipolar junction transistors, semiconductor lasers and photodevices, after which the subject of heterostructures and superlattices is taken up with coverage of electronic, lattice dynamical, optical, and transport properties. The book concludes with treatments of metal-semiconductor devices such as MOSFETs and devices based on heterostructures. Graduate students and lecturers in semiconductor physics, condensed matter physics, electromagnetic theory, and quantum mechanics will find this a useful textbook and reference work. To request a copy of the Solutions Manual, visit:

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Book Information

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M. Balkanski, Professor Emeritus of Physics, Universite Pierre et Marie Curie, Paris, France. R.F. Wallis, Professor Emeritus of Physics, University of California at Irvine, USA

This is a good reference book on semiconductor physics, particularly on the basics. I will not suggest it for beginners though, but advanced graduate students may learn a lot of the basics, which they almost always think they know but actually do not. Examples juxtaposed with the text are helpful. But too much math many times obscure the physics that the book intends to teach. Nevertheless a good reference book for a library.

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