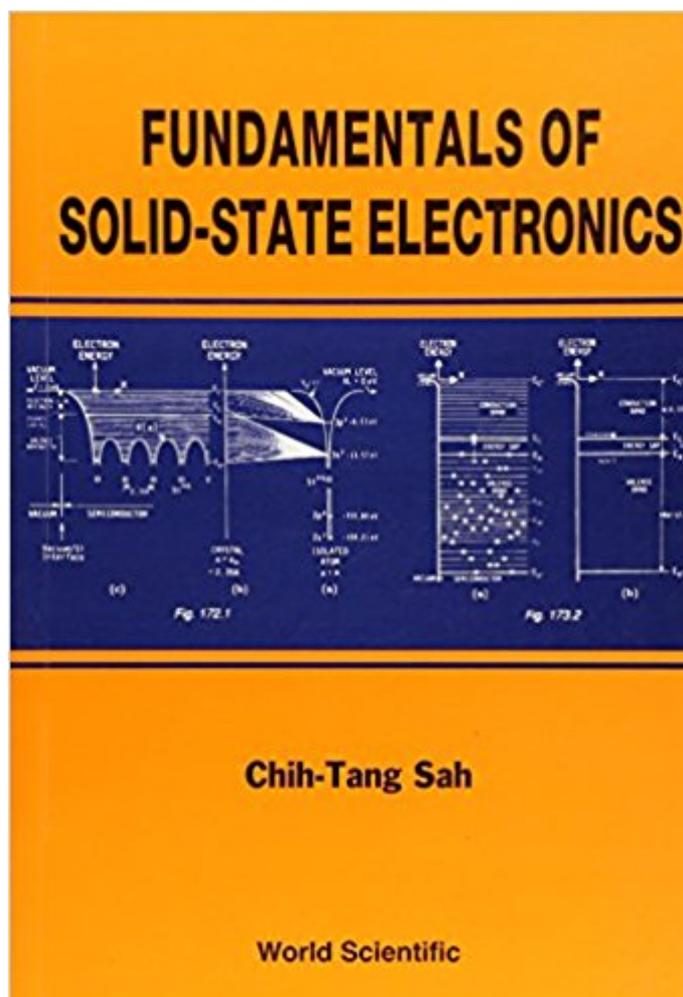


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Fundamentals Of Solid State Electronics



Synopsis

This is perhaps the most comprehensive undergraduate textbook on the fundamental aspects of solid state electronics. It presents basic and state-of-the-art topics on materials physics, device physics, and basic circuit building blocks not covered by existing textbooks on the subject. Each topic is introduced with a historical background and motivations of device invention and circuit evolution. Fundamental physics is rigorously discussed with minimum need of tedious algebra and advanced mathematics. Another special feature is a systematic classification of fundamental mechanisms not found even in advanced texts. It bridges the gap between solid state device physics covered here with what students have learnt in their first two years of study. Used very successfully in a one-semester introductory core course for electrical and other engineering, materials science and physics junior students, the second part of each chapter is also used in an advanced undergraduate course on solid state devices. The inclusion of previously unavailable analyses of the basic transistor digital circuit building blocks and cells makes this an excellent reference for engineers to look up fundamental concepts and data, design formulae, and latest devices such as the GeSi heterostructure bipolar transistors.

Book Information

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Customer Reviews

If you are new to device physics this is a very good place to start. It starts from basic crystallography and band theory of solids and moves on to the phenomenological models for the pn junction to MOSFET's and BJTs. It also contains a wealth of physical data that the working device physicist will always find useful for reference. I feel it is more comprehensive than Sze's "Device Physics", and

easier to read.

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