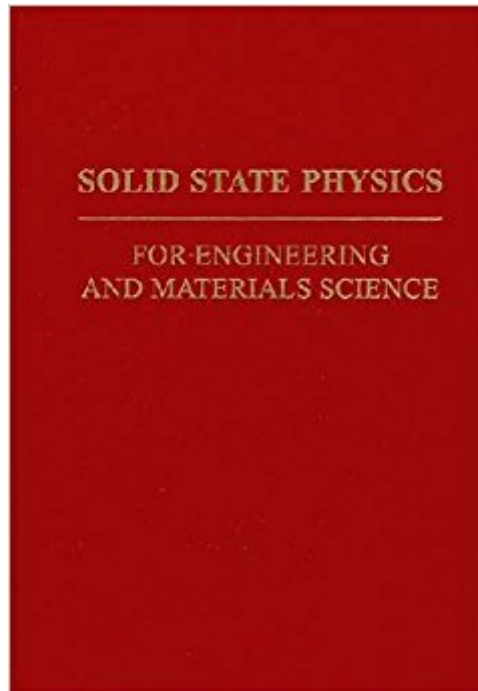




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Solid State Physics For Engineering And Materials Science



Synopsis

This text presents the basic physical properties of crystalline solids and device structures such as p-n junctions and quantum wells. Emphasis is on simple explanations of basic physical theory and application rather than a detailed analysis of complex devices and fabrication technology.

Book Information

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Customer Reviews

Great book, Highly recommended. Thanks

This is a thorough and well presented book. It starts with an introduction to crystals and quantum physics so it you get all the main tools to understand solid state physics. As a matter of fact the chapters on quantum physics are exceptional. True it's somewhat a summary of any quantum physics book but it's a very good one. I used it for a one term intensive course on both quantum physics and solid state physics angling towards semiconductor physics and transistors. The author provides concise and precise explanations plus all the mathematical progression. That's where it gets slightly cumbersome and the main reason I wouldn't recommend it for self study. You pretty much need to understand the reasoning behind those equations or you won't know what it's all about. As a reference book it's wonderful because everything is there. There's no other book that deals so well with the basics tools of quantum and semiconductor physics. My only complaint is that it lacks a final chapter on transistors(both bipolar and Mos would be appreciated) that would make it a truly phenomenal book.

If this is the same as the original Solid State and Semiconductor Physics by McKelvey, it is an excellent textbook from the 1960's which was once out of print. The other textbooks (usually for seniors or beginning graduate students of engineering who needed to learn modern physics for solid state and semiconductors, including an introduction to quantum mechanics) used generally did not explain the physics as well. Because of its age, you don't get explanations of many modern devices. But if you need to know the physics, the explanations are simply not given in other textbooks. And it doesn't cost as much as new textbooks. It is a textbook meant for serious university students, not self-study. If you want an easier introduction to quantum mechanics and more explanations of modern devices, I was going to suggest Streetman's Solid State Electronic Devices, but it costs as much as other current engineering texts--wow, the old editions didn't cost so much.

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