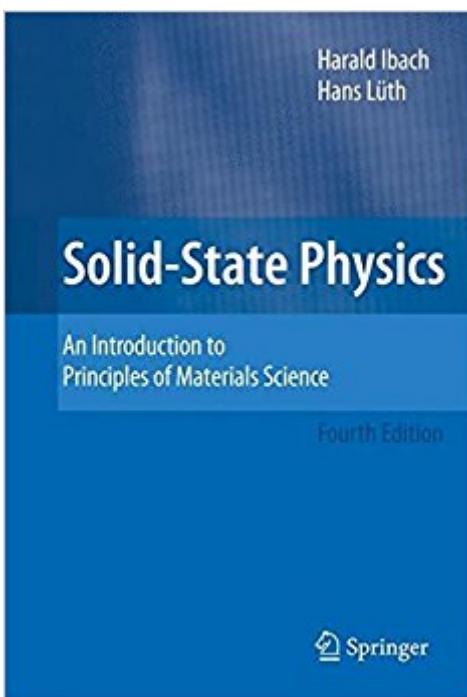


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Solid-State Physics: An Introduction To Principles Of Materials Science (Advanced Texts In Physics (Paperback))



Synopsis

This new edition of the well-received introduction to solid-state physics provides a comprehensive overview of the basic theoretical and experimental concepts of materials science. Experimental aspects and laboratory details are highlighted in separate panels that enrich text and emphasize recent developments. Notably, new material in the third edition includes sections on important new devices, aspects of non-periodic structures of matter, phase transitions, defects, superconductors and nanostructures. Students will benefit significantly from solving the exercises given at the end of each chapter. This book is intended for university students in physics, materials science and electrical engineering. It has been thoroughly updated to maintain its relevance and usefulness to students and professionals.

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This new edition of the popular introduction to solid-state physics provides a comprehensive overview on basic theoretical and experimental concepts of material science. Additional sections

emphasize current topics in solid-state physics. Notably, sections on important devices, aspects of non-periodic structures of matter, phase transitions, defects, superconductors and nanostructures have been added, the chapters presenting semi- and superconductivity had been completely updated. Students will benefit significantly from solving the exercises given at the end of each chapter. This book is intended for university students in physics, engineering and electrical engineering. This edition has been carefully revised, updated, and enlarged. Among the key recent developments incorporated throughout GMR (giant magneto resistance), thin-film magnetic properties, magnetic hysteresis and domain walls, quantum transport, metamaterials, and preparation techniques for nanostructures. From a review of the original edition

"... An excellent mix of concepts, theoretical arguments, and discussion of modern experiments - all at an introductory level ... Full of illustrations, photographs, schematic diagrams of experimental techniques, and graphs of results..." -- American Journal of Physics

This text is very concise and made for the student or professional who want to get to the theory fast and keep the key concepts and derivations fresh in his mind. It may not be what some expect, like a Kittel type of book, full of pictures and conceptualizations. It is really meant for someone who has been through a properties oriented and somewhat encyclopedic book or course, and now wants to know the theory, derive and connect the dots and have a more analytical understanding of solid state problems.

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