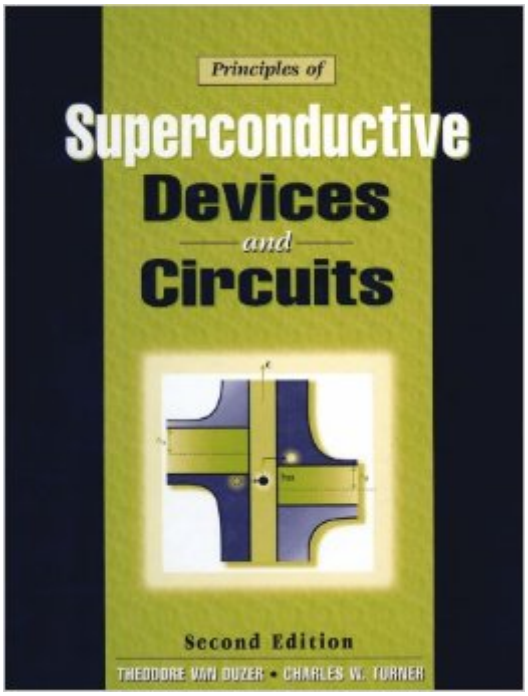
Principles Of Superconductive Devices And Circuits (2nd Edition)



Synopsis

KEY BENEFIT:The field of applied superconductivity has been transformed by new materials, new fabrication methods, innovative device and circuit concepts, and the discovery of high-temperature superconductors. In this book, two of the field's leading experts present an authoritative, up-to-date guide to the theory and current practice of superconductivity.KEY TOPICS:The book begins by introducing normal metal behavior at low temperatures, and the phase transition to superconductivity. It presents the classic Meissner experiment, and reviews several key theories essential to practical analysis. In each case, the book helps readers develop an intuitive understanding, while minimizing the quantum mechanics and thermodynamics required. Coverage includes an up-to-date analysis of microwave and millimeter-wave applications; a richly-developed treatment of Josephson junctions and devices; advanced high-temperature oxide superconductor applications; Ginzburg-Landau equations; Type II superconductivity theories and technologies; and more. The CD-ROM contains valuable software for circuit simulation and inductance calculations.MARKET:All electrical engineering and applied physics professionals working in R&D in industrial, university or government settings; as well as advanced students of applied superconductivity.

Book Information

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Customer Reviews

This book starts from the basic physics of superconductivity and deals with superconducting devices, such as SQUIDs, SIS mixers and Single Flux Quantum devices. The treatments of each

device are based on the current research, so that readers easily get the front of the fields. It also includes a prenty of important papers as the references and thus you can easily get into the deep level. I found one disadvantage that there is no statements on single electron/Cooper pair tunneling phenomena. I recommend this book for the persons to study superconducting electronics from students to the experts in this field. This book is valuable even for the persons who read the first editon because each treatments are updated.

There is a more expensive next edition, but all the basics are here. The math is not for the timid, but it doesn't get in the way of the physical effects.