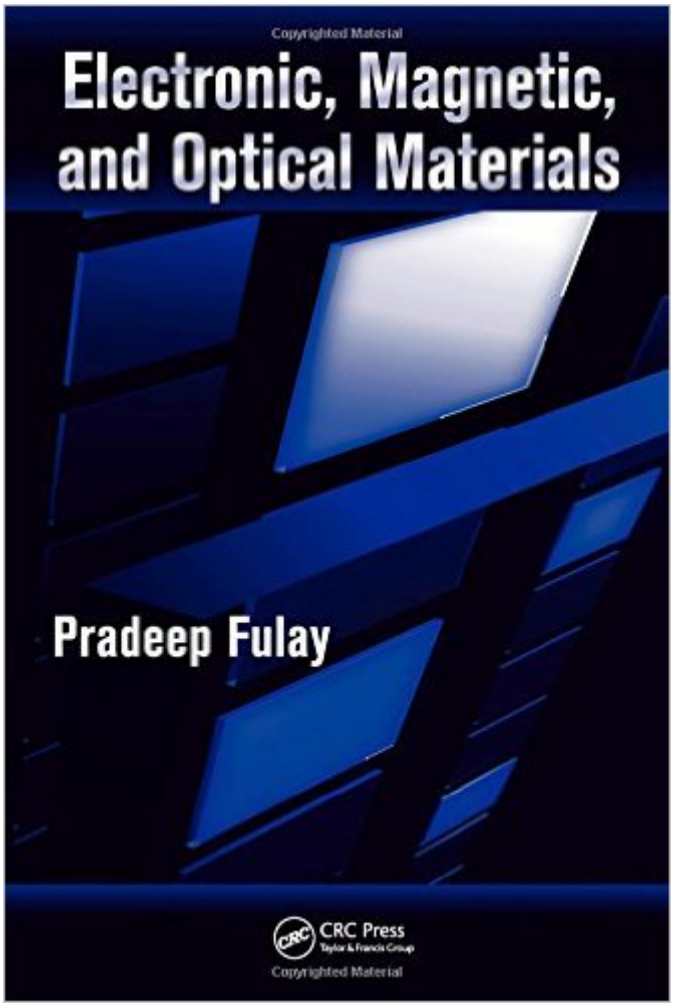
Electronic, Magnetic, And Optical Materials (Advanced Materials And Technologies)



Synopsis

More than ever before, technological developments are blurring the boundaries shared by various areas of engineering (such as electrical, chemical, mechanical, and biomedical), materials science, physics, and chemistry. In response to this increased interdisciplinarity and interdependency of different engineering and science fields, Electronic, Magnetic, and Optical Materials takes a necessarily critical, all-encompassing approach to introducing the fundamentals of electronic, magnetic, and optical properties of materials to students of science and engineering. Weaving together science and engineering aspects, this book maintains a careful balance between fundamentals (i.e., underlying physics-related concepts) and technological aspects (e.g., manufacturing of devices, materials processing, etc.) to cover applications for a variety of fields, including: Nanoscience Electromagnetics Semiconductors Optoelectronics Fiber optics Microelectronic circuit design Photovoltaics Dielectric ceramics Ferroelectrics, piezoelectrics, and pyroelectrics Magnetic materials Building upon his twenty years of experience as a professor, Fulay integrates engineering concepts with technological aspects of materials used in the electronics, magnetics, and photonics industries. This introductory book concentrates on fundamental topics and discusses applications to numerous real-world technological examplesâ •from computers to credit cards to optic fibersâ •that will appeal to readers at any level of understanding. Gain the knowledge to understand how electronic, optical, and magnetic materials and devices work and how novel devices can be made that can compete with or enhance silicon-based electronics. Where most books on the subject are geared toward specialists (e.g., those working in semiconductors), this long overdue text is a more wide-ranging overview that offers insight into the steadily fading distinction between devices and materials. It is well-suited to the needs of senior-level undergraduate and first-year graduate students or anyone working in industry, regardless of their background or level of experience.

Book Information

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Customer Reviews

Good quality

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