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Autore	Kao Kwan-Chi
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Involving Real Charges; 5.7 Basic Effects of Electrets; 5.8 Materials for Electrets; 5.9 Applications of Electrets; References; 6. Charge Carrier Injection from Electrical Contacts; 6.1 Concepts of Electrical Contacts and Potential Barriers; 6.2 Charge Carrier Injection through Potential Barriers from Contacts; 6.3 Tunneling through Thin Dielectric Films between Electrical Contacts; 6.4 Charge Transfer at the Metal-Polymer Interface; References; 7. Electrical Conduction and Photoconduction; PART I: ELECTRICAL CONDUCTION
7.1 Introductory Remarks 7.2 Ionic Conduction; 7.3 Electronic Conduction; 7.4 Bulk-Limited Electrical Conduction; 7.5 Bulk-Limited Electrical Conduction Involving Two Types of Carriers; 7.6 High-Field Effects; 7.7 Transitions between Electrical Conduction Processes; 7.8 Current Transient Phenomena; 7.9 Experimental Methodology and Characterization; PART II: PHOTOCOCONDUCTION; 7.10 Quantum Yield and Quantum Efficiency for Photoconduction; 7.11 Generation of Nonequilibrium Charge Carriers; 7.12 Photoconduction Processes; 7.13 Photosensitization; 7.14 Transient Photoconduction; References
8. Electrical Aging, Discharge, and Breakdown Phenomena 8.1 Electrical Aging; 8.2 Electrical Discharges; 8.3 Electrical Breakdown; References; Index

Sommario/riassunto

In general, a dielectric is considered as a non-conducting or insulating material (such as a ceramic or polymer used to manufacture a microelectronic device). This book describes the laws governing all dielectric phenomena. A unified approach is used in describing each of the dielectric phenomena, with the aim of answering "what?", "how?" and "why?" for the occurrence of each phenomenon; Coverage unavailable in other books on ferroelectrics, piezoelectrics, pyroelectrics, electro-optic processes, and electrets; Theoretical analyses are general and broadly applicable;
