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CRYSTALS; 4.1 Model and Internal Electric Fields; 4.2 Polar Orientational Phase Transition in Smectic Monolayers; 4.3 Change of Orientational Order Parameter at the Critical Point
4.4 Dielectric Properties Influenced by the Orientational Phase Transition 4.5 Summary; References; CHAPTER 5 DIELECTRIC RELAXATION PHENOMENA; 5.1 Rotational Debye Brownian Motion Model; 5.2 Relaxation Process at an Air-water Interface; 5.3 Determination of Dielectric Relaxation Time; 5.4 Summary; References; CHAPTER 6 CHIRAL PHASE SEPARATION; 6.1 Elastic Energy and Bragg-Williams Mixing Energy; 6.2 Chiral Phase Separation; 6.3 Discrete One-dimensional CPS Solution; 6.4 Summary; 6.5 Appendix; References; CHAPTER 7 NONLINEAR EFFECTS; 7.1 SOS in Orientational Order Parameters for Coo Monolayers
7.2 Chirality Representation 7.3 SHG-CD Effect; 7.4 SHG-MDC Measuring System; 7.5 Quantum Mechanical Analysis of Photoisomerization; 7.6 Summary; References; CHAPTER 8 THERMALLY-STIMULATED CURRENT; 8.1 Thermally-stimulated Current; 8.2 Depolarization due to Thermal Stimulation; 8.3 TSC Experiment; 8.4 Phase Transition; 8.5 Thermodynamics Approach to Monolayers; 8.6 Summary; References; CHAPTER 9 ELECTRONIC PROPERTIES AT MIM INTERFACES; 9.1 Tunneling Current and Electronic Device Applications; 9.2 Nanometric Interfacial Electrostatic Phenomena in Ultrathin Films; 9.3 I-V Characteristic
9.4 Summary References

Sommario/riassunto

This book provides a fundamental physical picture of various phenomena occurring in organic monolayers, dealing with dielectric, elastic, and electronic properties. The dielectric properties are discussed in terms of orientational order parameters, which are used to interpret the dielectric spectrum observed through Maxwell displacement current measurement and optical second harmonic generation measurement. The elastic theory of organic monolayers is based on that of liquid crystals and emphasis is placed on the interfacial effect when discussing the electronic properties of organic monolayers
