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4.4 Theoretical Analysis of Signal Process in MEA Systems 4.4.1 Equivalent Circuit Model of Signal Process; 4.4.2 Impedance Properties Analysis of MEA; 4.4.3 Analysis of Extracellular Signal; 4.5 Application of MEA; 4.5.1 Dissociated Neural Network on MEA; 4.5.2 Slice on MEA; 4.5.3 Retina on MEA; 4.5.4 Pharmacological Application; 4.6 Development Trends; 4.6.1 Lab on a Chip; 4.6.2 Portable MEA System; 4.6.3 Other Developmental Trends; 4.7 Summary; References; Chapter 5 Field Effect Transistor (FET) as Cell-BasedBiosensors; 5.1 Introduction; 5.2 Principle; 5.3 Device and System
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Sommario/riassunto

In the 21st century, we are witnessing the integration of two dynamic disciplines - electronics and biology. As a result bioelectronics and biosensors have become of particular interest to engineers and researchers working in related biomedical areas. Written by recognized experts the field, this leading-edge resource is the first book to systematically introduce the concept, technology, and development of cell-based biosensors. Readers find details on the latest cell-based biosensor models and novel micro-structure biosensor techniques. Taking an interdisciplinary approach, this unique volume presents the latest innovative applications of cell-based biosensors in a variety of biomedical fields. The book also explores future trends of cell-based biosensors, including integrated chips, nanotechnology and microfluidics. Over 140 illustrations help clarify key topics throughout the book.