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Nota di contenuto	2.3.1.2 Transduction of Odor Signals2.3.1.3 Molecular Biology of Olfaction; 2.3.2 Taste; 2.3.2.1 Anatomy of Taste; 2.3.2.2 Transduction of Taste Signals; 2.3.2.3 Molecular Biology of Taste; 2.4 Cell-Based Sensors and Receptor-Based Sensors ; 2.4.1 Tissue-Based Sensors ; 2.4.2 Cell-Based Sensors ; 2.4.3 Receptor-Based Sensors ; 2.4.3.1 Production of Odorant Receptors; 2.4.3.2 Immobilization of Odorant Receptors; 2.4.3.3 Measurement from Odorant Receptors; 2.4.4 Summary of the Biosensors; 2.5 Future Prospects; References; Chapter 3 Large-Scale Chemical Sensor Arrays for Machine Olfaction 3.1 Introduction3.2 Overview of Artificial Olfactory Systems; 3.3 Common Sensor Technologies Employed in Artificial Olfactory Systems; 3.3.1 Metal-Oxide Gas Sensors ; 3.3.2 Piezoelectric Sensors; 3.3.3 Conducting Polymer Sensors; 3.4 Typical Application of "Electronic Nose" Technologies; 3.5 A Comparison between Artificial and the Biological Olfaction Systems; 3.6 A Large-Scale Sensor Array ; 3.6.1 Conducting Polymers; 3.6.2 Sensor Interrogation Strategy; 3.6.3 Sensor Substrate; 3.7 Characterization of the Large-Scale Sensor Array

3.7.1 Pure Analyte Study: Classification and Quantification Capability; 3.7.2 Binary Mixture Study: Segmentation and Background Suppression Capability; 3.7.3 Polymer Classes: Testing Broad and Overlapping Sensitivity, High Level of Redundancy; 3.7.4 System Robustness and Long-Term Stability ; 3.8 Conclusions; Acknowledgment; References; Chapter 4 Taste Sensor: Electronic Tongue with Global Selectivity; 4.1 Introduction; 4.2 Electronic Tongues; 4.3 Taste Sensor; 4.3.1 Introduction; 4.3.2 Principle; 4.3.3 Response Mechanism; 4.3.4 Measurement Procedure; 4.3.5 Sensor Design Techniques 4.3.6 Basic Characteristics 4.3.6.1 Threshold; 4.3.6.2 Global Selectivity; 4.3.6.3 High Correlation with Human Sensory Scores; 4.3.6.4 Definition of Taste Information; 4.3.6.5 Detection of Interactions between Taste Substances; 4.3.7 Sample Preparation; 4.3.8 Analysis; 4.4 Taste Substances Adsorbed on the Membrane; 4.5 Miniaturized Taste Sensor; 4.6 Pungent Sensor; 4.7 Application to Foods and Beverages; 4.7.1 Introduction; 4.7.2 Beer; 4.7.3 Coffee; 4.7.4 Meat; 4.7.5 Combinatorial Optimization Technique for Ingredients and Qualities Using a GA; 4.7.5.1 Introduction; 4.7.5.2 GA 4.7.5.3 Constrained Nonlinear Optimization

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