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| Soggetti | Medicine Biotechnology Biomedical engineering Nanoscience Nanostructures Biomedicine, general Biomedical Engineering and Bioengineering Nanoscale Science and Technology |
| Lingua di pubblicazione | Inglese |
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| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Concept of Bioelectronic Nose -- Mechanisms of Olfaction -- Olfactory Receptor Proteins -- Odorant-Receptor Interaction -- Cell-Based System for Identification of Olfactory Receptors -- Neurobiology and Cultivation of Olfactory Receptor Neurons on a Chip -- Production of Olfactory Receptors Using Commercial E.coli Cell-free Systems -- Production of Olfactory Receptors and Nanosomes Using Yeast System for Bioelectronic Nose -- Production of Olfactory Receptors and Nanovesicles Using Heterologous Cell Systems for Bioelectronic Nose -- Biosensors Based on Odorant Binding Proteins -- Optical Methods in Studies of Olfactory System.-Carbon Nanotube-Based Sensor Platform for Bioelectronic Nose -- Conducting Polymer Nanomaterial-Based Sensor Platform for Bioelectronic Nose -- Applications and Perspectives of Bioelectronic Nose. |
| Sommario/riassunto | The "bioelectronic nose", the device which has a similar function to the |

human smell sensing system, can be realized by combining the olfactory cells or receptors with nanotechnology. In the last two decades, much has been learned about the smell sensing mechanism in biological systems. With knowledge about the biological olfactory system and the techniques for the expression of biological receptor proteins, we are able to utilize biological materials and systems to mimic the biological olfactory system. In addition to the advances in biological and biotechnological area, nanotechnology has progressed to a great degree. The bioelectronic nose is a good example of the integration of biotechnology and nanotechnology. This book describes basic biological sciences of the olfactory system, biotechnology for the production of olfactory biological elements, and nanotechnology for the development of various sensing devices. The purpose of this book is to provide the reader with a concept, basic sciences, fundamental technologies, applications, and perspectives of the bioelectronic nose.
