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Autore	Patra Santanu
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Exploring Principles and Applications as Artificial Antibodies in Disease Detection and Monitoring -- Chapter 10. Molecularly Imprinted Polymers in Optical Sensors: Principles, Fabrication and Applications for Disease Detection and Monitoring -- Chapter 11. MIP Based Chip Sensors -- Chapter 12. Importance of MIPs as artificial antibodies for the detection of bacteria and viruses -- Chapter 13. Important of MIPs as artificial antibodies in cancer detection and monitoring -- Chapter 14. Advancements in Molecularly Imprinted Polymers for Selective Recognition of Cancer Biomarkers -- Chapter 15. Importance of Molecularly Imprinted Polymers as Artificial Antibodies in Drug Delivery and Tissue Engineering -- Chapter 16. Importance of MIPs as Artificial Antibodies in Drug Delivery and Tissue Engineering -- Chapter 17. Aspects of molecularly imprinted polymers as synthetic antibodies for revelation and surveillance of Cancer.

Sommario/riassunto

The book delves into the intricate realm of Molecularly Imprinting Polymers (MIPs) functioning as artificial antibodies. The book explores several subjects, such as the basic principles, historical development, methods for creating and analyzing MIPs, creation of specific recognition sites, computational modeling, responsive behavior to stimuli, and the nano-scale applications of MIPs. Furthermore, it emphasizes the pivotal role of MIPs in the detection of cancer, infectious diseases, and the detection of bacteria and viruses. In addition, the book explores the field of different sensor technologies, specifically focusing on MIP-based electrochemical and optical sensors. It also highlights how these sensors might be integrated into wearable, flexible, and chip sensors. In addition, the book explores developing technologies and potential future applications of MIPs as artificial antibodies. This book offers a complete grasp of the promise and limitations of MIPs by providing insights into their challenges and real-time applications. The book will be a useful resource for researchers, students, professionals, and practitioners in bioengineering, biotechnology, medicine, and ethics.