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	Titolo	Nanosensors for Point-of-Care Diagnostics of Pathogenic Bacteria / / edited by Amitabha Acharya, Nitin Kumar Singhal
	Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023
	ISBN	981-9912-18-0
	Edizione	[1st ed. 2023.]
	Descrizione fisica	1 online resource (184 pages)
	Disciplina	616.92075
	Soggetti	Nanobiotechnology
		Diseases—Causes and theories of causation
		Biochemical markers
		Pathogenesis
		Biomarkers
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di bibliografia	Includes bibliographical references.
	Nota di contenuto	1. The surface biomarkers present on the bacterial cell surface -- 2. Optical nanosensors and their integrated approaches for the detection of pathogens -- 3. Surface Plasmon Resonance (SPR) Based Nanosensors for the Detection of Pathogenic Bacteria -- 4. Enzyme-linked Immunosorbent Assay-based nanosensors for the detection of pathogenic bacteria -- 5. Nanosensors enabled microfluidic biosensors for the detection of pathogenic bacteria -- 6. Electrochemical/voltammetric/amperometric nanosensors for the detection of pathogenic bacteria -- 7. Quartz Crystal Microbalance (QCM) based nanosensors for the detection of pathogenic bacteria -- 8. Surface Enhanced Raman Spectroscopy (SERS) based nanosensor for the detection of pathogenic bacteria.
	Sommario/riassunto	This book comprehensively reviews various nanodiagnostic approaches for the detection of bacterial pathogens. The initial chapter of the book discusses receptors present on bacterial cell surfaces that can be targeted for diagnostic applications. The book then presents different fluorescent nanoparticle systems that are used for bacterial detection. Further, it covers surface plasmon resonance (SPR), ELISA, and QCM-based nanosensors to detect pathogenic bacteria. It examines different

nanosensors used for the microfluidic-based detection of bacterial pathogens, including microfluidic paper-based analytical devices (PADs), lateral flow devices, and miniaturized PCR devices. The book also covers the current electrochemical, voltammetric, and amperometric nanosensors-based microorganism recognition approaches. Lastly, the book summarizes the current challenges and the futuristic application of nanosensors to detect bacterial pathogens. This book is an invaluable resource for all medical laboratories and clinical institutions dealing with infectious diseases.