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Collana	Smart Nanomaterials Technology, , 3004-8281
Altri autori (Persone)	GhoraiSuvankar HusenAzamal
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Nota di contenuto	Overview of the current Nano-materials, synthesis, properties and characterization -- Smart nano materials and modifications -- ‘Green’ synthesis of nanoparticles: applications for development of smart materials -- Types of transducers used for smart nano devices -- Nano materials in Lateral flow assay platforms -- Aptamer based lateral flow assay as a smart point-of care device -- Antibody, DNA and enzyme based Biosensing platform as on-site testing kit -- Crisper based POC devices for detection of opportunistic infections -- Programmable Hybrid Integrated Circuit/Microfluidic Chips as Low-Cost functionalized smart microdevices for Point-of-Care Testing -- Flow Cytometry-Based Biosensing Chip for Point-Of-Care Diagnostics -- Semiconductor-Based Biosensing Chip for bed-side testing -- Magnetic-nanosensor based diagnostic chips -- Point of Care Smart Diagnostic Devices for Rapid Detection of Viral Infection -- Nano devices for food-borne pathogen and toxin detection -- Nano materials for the rapid identification of agriculturally important plant pathogens -- Nano devices for Environmental pollutants and allergen detection -- Point-

	of-care devices for water quality assessment -- Nanotechnology Based Point-of-Care Diagnostics and Therapeutics for Neurological Disorders -- Functionalized smart biosensor in cell and tissue fabrication -- Challenges and future prospects.
Sommario/riassunto	This book highlights the recent advancement in point-of-care testing (POCT) technologies utilizing ‘smart’ nanomaterials for the analysis of biomarkers related to disease, which includes metabolites, enzymes, proteins, nucleic acids, cancer cells and multidrug-resistant pathogen. The POCT refers to medical diagnostic tests performed near the place and time of patient care. During the recent pandemic of COVID-19, many realized the importance of affordable, rapid and accurate POCT devices and their usefulness to combat the spread of the infection. The chapters in this book describe the emergence of ‘smart’ nanomaterials with unique physical and chemical properties being utilized in POCT devices for immobilizing biorecognition elements and labels for signal generation, transduction and amplification. It showcases the applications of these smart nanomaterials and their superiority in developing point-of-care diagnostics devices in a wide range of applied fields like food industry, agriculture sector, water quality assessment, pharmaceuticals and tissue engineering. It also looks into the challenges associated and future direction of research in this promising field. This book caters as reference book for researches from the field of nanobiotechnology and biomedical sciences who are interested in the development of rapid, affordable and accurate POCT devices.