1. Record Nr. UNINA9910580161603321

Titolo	Recent Advances in Plasmonic Probes : Theory and Practice / / edited by Rajib Biswas, Nirmal Mazumder
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
ISBN	3-030-99491-0
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (498 pages)
Collana	Lecture Notes in Nanoscale Science and Technology, , 2195-2167 ; ; 33
Disciplina	681.2
Soggetti	Nanophotonics Plasmonics Materials Detectors Molecular probes Materials - Microscopy Nanotechnology Microfluidics Nanophotonics and Plasmonics Sensors and biosensors Biological Sensors and Probes Microscopy Nanoengineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Chapter 1. Fundamentals of Plasma Oscillation -- Chapter 2. Theory of Plasmonic Probes -- Chapter 3. An analytic overview of equations of substantial state in plasmonic perspective -- Chapter 4. Plasmonics Studies for Molecular Scale Optoelectronics -- Chapter 5. Aluminum: a sustainable universal plasmonic materials -- Chapter 6. Surface plasmon resonance biosensors based on Kretschmann configuration: basic instrumentation and applications -- Chapter 7. Plasmonic nanoprobes for SERS based theranostics applications -- Chapter 8. 2D Nanomaterials based Surface Plasmon Resonance probes for Biosensing

applications -- Chapter 9. Plasmonic sensors: an insight into fundamentals, compositions and applications -- Chapter 10. Improved biosensor device to diagnose malaria based on one dimensional photonic crystal -- Chapter 11. U-Bent Fiber Optic Plasmonic Sensors: Fundamentals, Applications, Challenges and Future Directions -- Chapter 12. An appraisal on Plasmonic Heating of Nanostructures -- Chapter 13. Plasmonic nanoparticles for polarization-sensitive analytical techniques -- Chapter 14. Synthesis, conjugation and applications of chiral nanoparticles as plasmonic probes -- Chapter 15. Plasmonic optical imaging of biological samples -- Chapter 16. Deep Tissue High Resolution and Background-free Imaging with Plasmonic SAX microscopy -- Chapter 17. Microfluidic Plasmonic Sensors: Theory and Applications -- Chapter 18. Polyoxometalate based composite materials in sensing applications -- Chapter 19. Plasmonic Random Lasers.

Sommario/riassunto

This book gives a comprehensive overview of recent advancements in both theory and practical implementation of plasmonic probes. Encompassing multiple disciplines, the field of plasmonics provides a versatile and flexible platform for nanoscale sensing and imaging. Despite being a relatively young field, plasmonic probes have come a long way, with applications in chemical, biological, civil, and architectural fields as well as enabling many analytical schemes such as immunoassay, biomarkers, environmental indexing, and water quality sensing, to name but a few. The objective of the book is to present in-depth analysis of the theory and applications of novel probes based on plasmonics, with a broad selection of specially-invited chapters on the development, fabrication, functionalization, and implementation of plasmonic probes as well as their integration with current technologies and future outlook. This book is designed to cater to the needs of novice, seasoned researchers and practitioners in academia and industry, as well as medical and environmental fields.