

1. Record Nr.	UNINA9910298646403321
Autore	Chen Lingxin
Titolo	Novel Optical Nanoprobes for Chemical and Biological Analysis [[electronic resource] /] / by Lingxin Chen, Yunqing Wang, Xiuli Fu, Ling Chen
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2014
ISBN	3-662-43624-8
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (105 p.)
Collana	SpringerBriefs in Molecular Science, , 2191-5407
Disciplina	681.25
Soggetti	Analytical chemistry Nanotechnology Biomedical engineering Environmental chemistry Analytical Chemistry Biomedical Engineering and Bioengineering Environmental Chemistry
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 at the end of each chapters.
Nota di contenuto	A Brief Introduction to Optical Nanoprobes -- Colorimetric Nanoprobes -- Fluorescent Nanoprobes -- Surface-Enhanced Raman scattering (SERS) nanoprobes -- Challenges and Perspectives of Optical Nanoprobes.
Sommario/riassunto	Novel Optical Nanoprobes for Chemical and Biological Analysis starts with a brief introduction to several kinds of versatile nanomaterials with novel optical properties, such as gold/silver nanoparticles, quantum dots, upconversion nanoparticles and graphene. It mainly focuses on the latest sensor design strategies, which apply the optical properties of nanomaterials to various detection techniques including colorimetry, fluorescence, and surface-enhanced Raman scattering (SERS). These sensors are attractive owing to their high sensitivity, high specificity, and potential for easy quantification of targets in many applications, such as conventional chemical and biological analysis, clinical diagnosis, and intracellular system sensing as well as single-molecule

detection. The challenges and future perspectives for optical nanoprobe are also presented, such as the increase in sensitivity for real environmental and clinical samples, the design and application of multifunctional nanoprobe, and biocompatibility of nanomaterials.
