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Titolo	Measuring Biological Impacts of Nanomaterials / / edited by Joachim Wegener
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ISBN	3-319-24823-5
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Descrizione fisica	1 online resource (221 p.)
Collana	Bioanalytical Reviews, , 1867-2086 ; ; 5
Disciplina	620.5
Soggetti	Analytical chemistry Nanochemistry Biochemistry Medicine Biophysics Biological physics Biotechnology Analytical Chemistry Biochemistry, general Biomedicine, general Biological and Medical Physics, Biophysics
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 and index.
Nota di contenuto	Standardized Physical Characterization of Nanoscale Particles: Towards a Bar Code for Nanomaterials -- Bioanalytical Aspects for the detection of nanoparticle effects on cells -- Interactions of Nanoscale Particles with the Air-Water Interface: Implications for Lung Effects of Nanomaterials -- Carbon Dots: Synthesis, Characterization and Bioanalytical Applications -- Changes in Motility of Cultured Cells caused by Nanoparticle Encounter -- Cellular Response to Nano- and Mesoscale Particles probed by Label-free Detection Techniques.
Sommario/riassunto	This book reviews several aspects of the biological response to nanoscale particles on a molecular and cellular level. Nanoscale materials and nanoscale particles in particular have interesting

properties and beneficial applications. While they thus have entered our daily lifes on many different levels (from electronics, over textiles, packaging or surface modifications, to biomedical applications), general rules describing their interaction with biological structures and biological matter are still difficult to derive. The existing literature suggests a variety of interaction schemes between nanoparticles and biological objects, not dispelling the public concerns about possible health effects and harmful properties. A systematic approach to the problem is needed and timely. This book specifically emphasizes bioanalytical problems starting from the characterization of the nanomaterials to the pitfalls and potential artifacts of state-of-the-art cytotoxicity assays that are frequently used to study harmful effects on cells. It also highlights the application of label-free bioanalytical techniques that can potentially complement the present approaches and hence provide new perspectives on this highly discussed cutting-edge field of research and public concern.