

1. Record Nr.	UNINA9910830255803321
Autore	Dahoo Pierre Richard
Titolo	Applications and metrology at nanometer scale 1 : smart materials, electromagnetic waves and uncertainties // Pierre-Richard Dahoo, Philippe Pougnet, Abdelkhalak El Hami
Pubbl/distr/stampa	Hoboken, New Jersey : , : John Wiley & Sons, Incorporated London, England : , : ISTE Ltd, , [2021] ©2021
ISBN	1-119-80814-6 1-119-80824-3 1-119-80822-7
Descrizione fisica	1 online resource (251 pages) : illustrations
Collana	Mechanical engineering and solid mechanics series Reliability of multiphysical systems set ; ; v. 9
Disciplina	780
Soggetti	Metrology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Nanometer Scale -- Statistical Tools to Reduce the Effect of Design Uncertainties -- Electromagnetic Waves and Their Applications -- Smart Materials -- Propagation of a Light Ray -- References -- Index -- Other titles from iSTE in Mechanical Engineering and Solid Mechanics.
Sommario/riassunto	To develop innovations in quantum engineering and nanosystems, designers need to adopt the expertise that has been developed in research laboratories. This requires a thorough understanding of the experimental measurement techniques and theoretical models, based on the principles of quantum mechanics. This book presents experimental methods enabling the development and characterization of materials at the nanometer scale, based on practical engineering cases, such as 5G and the interference of polarized light when applied for electromagnetic waves. Using the example of electromechanical, multi-physical coupling in piezoelectric systems, smart materials technology is discussed, with an emphasis on scale reduction and mechanical engineering applications. Statistical analysis methods are

presented in terms of their usefulness in systems engineering for experimentation, characterization or design, since safety factors and the most advanced reliability calculation techniques are included from the outset. This book provides valuable support for teachers and researchers but is also intended for engineering students, working engineers and Master's students.
