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Altri autori (Persone)	TiwariAtul
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Nota di contenuto	Part I Introduction -- 1 Nanotribological Characterization of Polymeric Nanocoatings: From Fundamental to Application -- Part II Contributions from Manufacturers -- 1 Mechanical Property Mapping at the Nanoscale Using PeakForce QNM Scanning Probe Technique -- 2 Measurement of Hardness of Very Hard Materials -- 3 Environmental Nanomechanical Testing of Polymers and Nanocomposites -- 4 Resolution Limits of Nanoindentation Testing -- 5 Nanoindentation, Nanoscratch and Dynamic Mechanical Analysis of High Performance Silicones -- Part III: Contributions from Users -- 1 Nanomechanical Properties and Deformation Mechanism in Metals, Oxides and Alloys -- 2 Nanomechanical Characterization of Soft Materials -- 3 Nanoindentation Applied To Closed-Cell Aluminium Foams -- 4 Mechanical Properties of Biomaterials Determined By Nano-Indentation and Nano-Scratch Tests -- 5 Nanomechanical Characterization of Brittle Rocks -- 6 Examining Impact of Particle Deagglomeration Techniques on Microstructure and Properties of Oxide Materials Through Nanoindentation -- 7 Nanoindentation of Micro Weld Formed Through Thin Nanolayered Filler -- 8 Effects of Residual Stress on Nano-Mechanical Behavior of Thin Films -- 9 Multiscale Modeling of Nanoindentation: From Atomistic To Continuum Models -- 10 Elastic-Plastic Behaviors of Vertically Aligned Carbon Nanotube Arrays by Large-Displacement Indentation Test.-Index.
Sommario/riassunto	This book is intended for researchers who are interested in

investigating the nanomechanical properties of materials using advanced instrumentation techniques. The chapters of the book are written in an easy-to-follow format, just like solved examples. The book comprehensively covers a broad range of materials such as polymers, ceramics, hybrids, biomaterials, metal oxides, nanoparticles, minerals, carbon nanotubes and welded joints. Each chapter describes the application of techniques on the selected material and also mentions the methodology adopted for the extraction of information from the raw data. This is a unique book in which both equipment manufacturers and equipment users have contributed chapters. Novices will learn the techniques directly from the inventors and senior researchers will gain in-depth information on the new technologies that are suitable for advanced analysis. On the one hand, fundamental concepts that are needed to understand the nanomechanical behavior of materials is included in the introductory part of the book. On the other hand, dedicated chapters describe the utilization of advanced numerical modeling in understanding the properties of complex materials. This book is useful for students and researchers from diverse backgrounds including chemistry, physics, materials science & engineering, biotechnology and biomedical engineering. It is well suited as a textbook for students and as a reference book for researchers.