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Nota di contenuto	Part I Principles: Theory and Practice: Physical principles of Force-Distance Curves by Atomic Force Microscopy -- Force-Distance Curves in Practice -- Part II Case Studies: Mechanical Properties of Homogeneous Polymer Films, Thin Polymer Films and Polymer Blends: Homogeneous Polymer Films -- Thin Polymer Films -- Polymer Blends -- Creep Compliance Measurement and Force-Modulation.
Sommario/riassunto	This Springer Laboratory volume is a practical guide for scientists and

students dealing with the measurement of mechanical properties of polymers at the nanoscale through AFM force-distance curves. In the first part of the book the reader will find a theoretical introduction about atomic force microscopy, focused on force-distance curves, and mechanical properties of polymers. The discussion of several practical issues concerning the acquisition and the interpretation of force-distance curves will help scientists starting to employ this technique. The second part of the book deals with the practical measurement of mechanical properties of polymers by means of AFM force-distance curves. Several "hands-on" examples are illustrated in a very detailed manner, with particular attention to the sample preparation, data analysis, and typical artefacts. This section gives a complete overview about the qualitative characterization and quantitative determination of the mechanical properties of homogeneous polymer samples, polymer brushes, polymer thin films, confined polymer samples, model blends and microstructured polymer blends through AFM force-distance curves. The book also introduces to new approaches and measurement techniques, like creep compliance and force modulation measurements, pointing out approximations, limitations and issues requiring further confirmation.