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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	From the contents: Overview of acoustic techniques -- Contact dynamics modelling -- Cantilever dynamics: theoretical modeling -- Finite elements modelling -- AFAM calibration -- Enhanced sensitivity -- UAFM -- Holography calibration -- UFM -- Friction/lateral techniques -- Harmonix -- Scanning microdeformation microscopy (SMM) -- Tip wear -- Comparison with other techniques -- Applications polymer -- Thin films.
Sommario/riassunto	The combination of atomic force microscopy with ultrasonic methods allows the nearfield detection of acoustic signals. The nondestructive characterization and nanoscale quantitative mapping of surface adhesion and stiffness or friction is possible. The aim of this book is to provide a comprehensive review of different scanning probe acoustic techniques, including AFAM, UAFM, SNFUH, UFM, SMM and torsional tapping modes. Basic theoretical explanations are given to understand not only the probe dynamics but also the dynamics of tip surface contacts. Calibration and enhancement are discussed to better define the performance of the techniques, which are also compared with other classical techniques such as nanoindentation or surface acoustic wave. Different application fields are described, including biological surfaces, polymers and thin films.