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| Nota di contenuto | Introduction -- Part I: Scanning Probe Microscopy Instrumentation -- Harmonic Oscillator -- Technical Aspects of Scanning Probe Microscopy -- Scanning Probe Microscopy Designs -- Electronics for Scanning Probe Microscopy -- Lock-In Technique -- Data Representation and Image Processing -- Artifacts in SPM -- Work Function, Contact Potential, and Kelvin Probe -- Part II: Atomic Force Microscopy (AFM) -- Forces between Tip and Sample -- Technical Aspects of Atomic Force Microscopy -- Static Atomic Force Microscopy -- Amplitude Modulation (AM) Mode in Dynamic Atomic Force Microscopy -- Intermittent Contact Mode/Tapping Mode -- Mapping of Mechanical Properties Using Force-Distance -- Frequency Modulation (FM) Mode in Dynamic Atomic Force -- Noise in Atomic Force Microscopy -- Quartz Sensors in Atomic Force Microscopy. |

Sommario/riassunto

This book explains the operating principles of atomic force microscopy with the aim of enabling the reader to operate a scanning probe microscope successfully and understand the data obtained with the microscope. This enhanced second edition to "Scanning Probe Microscopy" (Springer, 2015) represents a substantial extension and revision to the part on atomic force microscopy of the previous book. Covering both fundamental and important technical aspects of atomic force microscopy, this book concentrates on the principles the methods using a didactic approach in an easily digestible manner. While primarily aimed at graduate students in physics, materials science, chemistry, nanoscience and engineering, this book is also useful for professionals and newcomers in the field, and is an ideal reference book in any atomic force microscopy lab.