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Descrizione fisica	1 online resource (375 p.)
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- 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 Scanning Force Microscopy -- Surface States -- Forces Between Tip and Sample -- Technical Aspects of Atomic force Microscopy (AFM) -- 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 Curves -- Frequency Modulation (FM) Mode in Dynamic Atomic Force Microscopy -- Noise in Atomic Force Microscopy -- Quartz Sensors in Atomic force Microscopy -- Scanning Tunneling Microscopy -- Scanning Tunneling Spectroscopy (STS) -- Vibrational Spectroscopy with the STM -- Spectroscopy and Imaging of Surface States -- Building Nanostructures Atom by Atom.
Sommario/riassunto	This book explains the operating principles of atomic force microscopy and scanning tunneling microscopy. The aim of this book is to enable the reader to operate a scanning probe microscope successfully and understand the data obtained with the microscope. The chapters on the

scanning probe techniques are complemented by the chapters on fundamentals and important technical aspects. This textbook is primarily aimed at graduate students from physics, materials science, chemistry, nanoscience and engineering, as well as researchers new to the field.
