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Nota di contenuto	Introduction -- Robotics based AFM Nano-manipulation -- AFM Image Reconstruction using Thermal-drift Compensation Model -- Tip Model based AFM Image Reconstruction -- Stochastic Approach based Tip Localization -- Path Planning of Nano-robot using Probability Distribution Region -- Nano-manipulation Platform based on AFM.
Sommario/riassunto	This book highlights the latest advances in AFM nano-manipulation research in the field of nanotechnology. There are numerous uncertainties in the AFM nano-manipulation environment, such as thermal drift, tip broadening effect, tip positioning errors and manipulation instability. This book proposes a method for estimating tip morphology using a blind modeling algorithm, which is the basis of the analysis of the influence of thermal drift on AFM scanning images, and also explains how the scanning image of AFM is reconstructed with better accuracy. Further, the book describes how the tip positioning errors caused by thermal drift and system nonlinearity can be corrected using the proposed landmark observation method, and also explores the tip path planning method in a complex environment. Lastly, it

presents an AFM-based nano-manipulation platform to illustrate the effectiveness of the proposed method using theoretical research, such as tip positioning and virtual nano-hand.