

1. Record Nr.	UNINA9910829932503321
Autore	Sarid Dror
Titolo	Exploring scanning probe microscopy with mathematica / / Dror Sarid
Pubbl/distr/stampa	Weinheim, [Germany] : , : Wiley-VCH Verlag GmbH & Co. KGaA, , 2007 ©2007
ISBN	1-280-85452-9 9786610854523 3-527-61006-5 3-527-60987-3
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (312 p.)
Disciplina	502.82
Soggetti	Scanning probe microscopy - Data processing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Exploring Scanning Probe Microscopy with MATHEMATICA; Contents; Preface; 1 Introduction; 1.1 Style; 1.2 Mathematica Preparation; 1.2.1 General; 1.2.2 Example; 1.3 Recommended Books; 1.3.1 Mathematica Programming Language; 1.3.2 Scanning Probe Microscopies; 2 Uniform Cantilevers; 2.1 Introduction; 2.2 Bending Due to F(z); 2.2.1 General Equations; 2.2.2 Slope; 2.2.3 Angular Spring Constant; 2.2.4 Displacement; 2.2.5 Linear Spring Constant; 2.2.6 Numerical Example: Si; 2.2.7 Numerical Example: Ptlr; 2.3 Buckling Due to F(x); 2.3.1 General Equations; 2.3.2 Slope; 2.3.3 Angular Spring Constant 4.1 Introduction4.2 Bending Due to F(z): Triangular Shape; 4.2.1 General Equations; 4.2.2 Slope; 4.2.3 Angular Spring Constant; 4.2.4 Displacement; 4.2.5 Linear Spring Constant; 4.2.6 Numerical Examples; 4.3 Buckling due to F(x): Triangular Shape; 4.3.1 General Equations; 4.3.2 Slope; 4.3.3 Angular Spring Constant; 4.3.4 Displacement; 4.3.5 Linear Spring Constant; 4.3.6 Numerical Examples; 4.4 Bending due to F(z): V Shape; 4.4.1 General Equations; 4.4.2 Slope; 4.4.3 Angular Spring Constant; 4.4.4 Displacement; 4.4.5 Linear Spring Constant; 4.4.6 Numerical Examples 6.2 Tip-Sample Interaction

This new and completely updated edition features not only an accompanying CD-ROM, but also a new applications section, reflecting the many breakthroughs in the field over the last few years. It provides a complete set of computational models that describe the physical phenomena associated with scanning tunneling microscopy, atomic force microscopy, and related technologies. The result is both a solid professional reference and an advanced-level text, beginning with the basics and moving on to the latest techniques, experiments, and theory. In the section devoted to atomic force microscopy,
