1. Record Nr. UNINA9910961854103321

Titolo	Molecular manipulation with atomic force microscopy / / edited by Anne-Sophie Duwez, Nicolas Willet
Pubbl/distr/stampa	Boca Raton, : CRC Press, 2011 Boca Raton : , : CRC Press, , 2012
ISBN	0-429-09225-3 1-283-34995-7 9786613349958 1-4398-0967-4
Edizione	[1st ed.]
Descrizione fisica	1 online resource (285 p.)
Classificazione	SCI013060SCI077000TEC021000
Altri autori (Persone)	DuwezAnne-Sophie WilletNicolas
Disciplina	620/.5
Soggetti	Nanotechnology - Research Atomic force microscopy - Industrial applications Molecular dynamics
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 and index.
Nota di contenuto	Front Cover; Contents; Preface; Editors; Contributors; Chapter 1: Molecular Recognition Force Spectroscopy; Chapter 2: Mechanics of Proteins and Tailored Mechanics of Engineered Proteins; Chapter 3: Mechanics of Polysaccharides; Chapter 4: Mechanics and Interactions in DNA and RNA; Chapter 5: Mechanics of Synthetic Polymers; Chapter 6: Interplays between Chemistry and Mechanics in Single Molecules; Chapter 7: Molecular Construction: Pushing, Moving, Stretching, and Connecting Individual Molecules; Chapter 8: Extracting Molecules from Surfaces Chapter 9: Single-Molecule Delivery by MechanochemistryChapter 10: Single-Molecule Cut and Paste; Back Cover
Sommario/riassunto	The manipulation of molecules is an active area of research with applications in chemistry, biology, physics, engineering, and polymer science. This book provides a comprehensive review of single molecule manipulation with atomic force microscopy (AFM). The text demonstrates that AFMs are capable of meeting the three main

challenges in molecular manufacturing: manipulating and positioning each atom or molecule in the right place, making the atom or molecule form certain bonds, and achieving high-throughput fabrication. New and experienced researchers will find a wealth of information in this informative volume which demonstrates the potential of AFMs beyond imaging--