Record Nr. UNINA9910457514903321 Molecular manipulation with atomic force microscopy / / edited by **Titolo** Anne-Sophie Duwez, Nicolas Willet Pubbl/distr/stampa Boca Raton:,: CRC Press,, 2012 **ISBN** 0-429-09225-3 1-283-34995-7 9786613349958 1-4398-0967-4 Descrizione fisica 1 online resource (285 p.) Altri autori (Persone) DuwezAnne-Sophie WilletNicolas 620/.5 Disciplina Soggetti Nanotechnology - Research Atomic force microscopy - Industrial applications Molecular dynamics Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali 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 The manipulation of molecules is an active area of research with Sommario/riassunto 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--