

1. Record Nr.	UNINA9910437812903321
Titolo	Imaging and Manipulating Molecular Orbitals : Proceedings of the 3rd AtMol International Workshop, Berlin 24-25 September 2012 // edited by Leonhard Grill, Christian Joachim
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2013
ISBN	3-642-38809-4
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (202 p.)
Collana	Advances in Atom and Single Molecule Machines, , 2193-9705
Altri autori (Persone)	GrillLeonhard JoachimC
Disciplina	530
Soggetti	Surfaces (Physics) Physical chemistry Nanotechnology Biophysics Surface and Interface and Thin Film Physical Chemistry
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.
Nota di contenuto	Observations of individual Cu-Phthalocyanine molecules deposited on nano-tips in the field emission microscope -- High voltage STM imaging of single Copper -- Motional Analysis of A Single Organic Molecule Using Nano Carbon Materials: Scope of Atomic Level Imaging and Spectroscopy -- Imaging orbitals by ionization or electron attachment: the role of Dyson orbitals -- Mapping the electronic resonances of single molecule STM tunnel junction -- Manipulation and spectroscopy of individual phthalocyanine molecules on InAs(111)A with a low-temperature scanning tunneling microscope -- Electronic Structure and Properties of Graphene Nanoribbons: zigzag and armchair edges -- Imaging and manipulation of molecular electronic states on metal surfaces with scanning tunneling microscopy -- SPM imaging of trinaphthylene molecular states on a hydrogen passivated Ge(001) surface -- STM Theory and image interpretation -- Simulations of constant current STM images of open-shell systems -- Electronic

transmission through a single impurity in a multi-configuration scattering matrix approach -- Electron transport through a molecular junction using a multiconfigurational description -- Visualizing Electron Correlation in Molecules Using a Scanning Tunneling Microscope: Theory and Ab-Initio Prediction -- Submolecular Resolution Imaging of C60: From Orbital Density to Bond Order.

---

#### Sommario/riassunto

Imaging and Manipulating Molecular Orbitals celebrates the 60th anniversary of the first image of a single molecule by E. Müller. This book summarizes the advances in the field from various groups around the world who use a broad range of experimental techniques: scanning probe microscopy (STM and AFM), field emission microscopy, transmission electron microscopy, attosecond tomography and photoemission spectroscopy. The book is aimed at those who are interested in the field of molecular orbital imaging and manipulation. Included in the book are a variety of experimental techniques in combination with theoretical approaches which describe the spatial distribution and energies of the molecular orbitals. The goal is to provide the reader with an up-to-date summary on the latest developments in this field from various points of view.

---