

1. Record Nr.	UNINA9910300380803321
Autore	Sun Chang Q
Titolo	Relaxation of the Chemical Bond : Skin Chemisorption Size Matter ZTP Mechanics H2O Myths // by Chang Q Sun
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2014
ISBN	981-4585-21-1
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (816 p.)
Collana	Springer Series in Chemical Physics, , 0172-6218 ; ; 108
Disciplina	541.3453
Soggetti	Surfaces (Physics) Interfaces (Physical sciences) Thin films Physical chemistry Nanotechnology Materials—Surfaces Surface and Interface Science, Thin Films Physical Chemistry Surfaces and Interfaces, Thin Films Nanotechnology and Microengineering
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.
Nota di contenuto	From the Contents: Part I Molecular Chemisorption -- Introduction -- Foundations -- STM and LEED: Atomic Valences and Bond Geometry -- Part II Atomic Undercoordination -- Introduction -- Principles: BOLS and NEP -- Surface Relaxation and Nanosolid Densification -- Part III Mechano and Thermo Activation -- Introduction -- Principles -- Liquid and Solid Surfaces -- Part IV Water and Ice -- Introduction -- Principles: Hypotheses and Expectations.
Sommario/riassunto	The aim of this book is to explore the detectable properties of a material to the parameters of bond and non-bond involved and to clarify the interdependence of various properties. This book is composed of four parts; Part I deals with the formation and relaxation dynamics of bond and non-bond during chemisorptions with uncovering of the correlation among the chemical bond, energy band,

and surface potential barrier (3B) during reactions; Part II is focused on the relaxation of bonds between atoms with fewer neighbors than the ideal in bulk with unraveling of the bond order-length-strength (BOLS) correlation mechanism, which clarifies the nature difference between nanostructures and bulk of the same substance; Part III deals with the relaxation dynamics of bond under heating and compressing with revealing of rules on the temperature-resolved elastic and plastic properties of low-dimensional materials; Part IV is focused on the asymmetric relaxation dynamics of the hydrogen bond (O:H-O) and the anomalous behavior of water and ice under cooling, compressing, and clustering. The target audience for this book includes scientists, engineers and practitioners in the area of surface science and nanoscience.
