1. Record Nr. UNINA9910877287603321

Titolo	Correlation spectroscopy of surfaces, thin films, and nanostructures / / edited by Jamal Berakdar, Jurgen Kirschner
Pubbl/distr/stampa	Weinheim, : Wiley-VCH, c2004
ISBN	1-280-52111-2 9786610521111 3-527-60342-5 3-527-60649-1
Descrizione fisica	1 online resource (258 p.)
Altri autori (Persone)	BerakdarJ. <1964-> KirschnerJ <1945-> (Jurgen)
Disciplina	530.4/17
Soggetti	Surfaces (Physics) Nanostructures Thin films Spectrum analysis
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	Correlation Spectroscopy of Surfaces, Thin Films, and Nanostructures; Contents; Preface; List of Contributors; 1 A First-Principles Scheme for Calculating the Electronic Structure of Strongly Correlated Materials: GW+DMFT; 1.1 Introduction; 1.2 The GW Approximation; 1.2.1 Theory; 1.2.2 The GW Approximation in Practice; 1.3 Dynamical Mean Field Theory; 1.3.1 DMFT in Practice; 1.4 GW+DMFT; 1.4.1 Simplified Implementation of GW+DMFT and Application to Ferromagnetic Nickel; 1.5 Conclusions; References; 2 A Many-body Approach to the Electronic and Optical Properties of Copper and Silver 2.1 Introduction2.2 Quasiparticle Electronic Structure of Copper; 2.3 The Plasmon Resonance of Silver; 2.4 Dynamical Excitonic Effects in Metals; 2.5 Conclusions; References; 3 Correlation Spectroscopy of Nano-size Materials; 3.1 Introduction; 3.2 Generalities; 3.3 Excitations in Finite Systems: Role of the Electron-Electron Interaction; 3.3.1 Formal Development; 3.4 Results and Discussion; 3.5 Conclusions; References; 4 Electron-Electron Coincidence Studies on Atomic Targets:

A Review of (e,2e) and (e,3e) Experiments; 4.1 Introduction; 4.2 Structure Studies; 4.3 Dynamics Studies
4.3.1 The Optical Limit4.3.2 Dynamics Studies at Intermediate Energies and Intermediate Momentum Transfer; 4.4 Conclusion; References; 5 Studying the Details of the Electron-Electron Interaction in Solids and Surfaces; 5.1 Introduction; 5.2 General Considerations; 5.3 Results and Interpretations; 5.4 Conclusions; References; 6 Two-Electron Spectroscopy Versus Single-Electron Spectroscopy for Studying Secondary Emission from Surfaces; 6.1 Introduction; 6.2 Experimental Details of the Time-of-Flight (e,2e) Spectroscopy in Reflection Mode; 6.2.1 Experimental Set-Up
6.2.2 Combination of Time-of-Flight Energy Measurements and Coincidence Technique6.2.3 Data Processing; 6.3 Experimental Results and Discussion; 6.3.1 LiF Film on Si(100); 6.3.2 Single Crystal of W (110); 6.3.3 Single Crystal of Si(001); 6.4 Conclusions; References; 7 EMS Measurement of the Valence Spectral Function of Silicon - A Test of Many-body Theory; 7.1 Introduction; 7.2 Experimental Details; 7.3 Theory; 7.3.1 Independent Particle Approximation; 7.3.2 Electron Correlation Models; 7.4 Results and Discussions; 7.4.1 Band Structure; 7.4.2 Diffraction Effects; 7.4.3 Many-body Effects
7.5 ConclusionsReferences; 8 Recent Results from (, e) and Compton Spectroscopy; 8.1 Introduction; 8.2 Experiment; 8.3 Results and Discussion; 8.3.1 Graphite; 8.3.2 Fullerene; 8.3.3 Cu-Ni Alloy; 8.4 Lifetime Effects in Compton Scattering; 8.5 Summary; References; 9 Theory of (e,2e) Spectroscopy from Ferromagnetic Surfaces; 9.1 Introduction; 9.2 Concepts and Formalism; 9.3 Spin and Spatial Selection Rules; 9.4 Numerical Results for Fe(110); References; 10 Ab-initio Calculations of Charge Exchange in Ion-surface Collisions: An Embedded-cluster Approach; 10.1 Introduction
10.2 Convergence of the Density of States as a Function of Cluster Size

Sommario/riassunto

Here, leading scientists present an overview of the most modern experimental and theoretical methods for studying electronic correlations on surfaces, in thin films and in nanostructures. In particular, they describe in detail coincidence techniques for studying many-particle correlations whilecritically examining the informational content of such processes from a theoretical point viewpoint. Furthermore, the book considers the current state of incorporating many-body effects into theoretical approaches.Covered topics:-Auger-electron photoelectron coincidence experiments an