

<<光电子光谱学>>

图书基本信息

书名：<<光电子光谱学>>

13位ISBN编号：9787506292771

10位ISBN编号：7506292777

出版时间：2009-3

出版时间：世界图书出版公司

作者：胡夫尼

页数：662

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

前言

Since the completion of the manuscript for the first edition of Photoelectron Spectroscopy, the field has undergone a steady growth. Firstly, the theory has been refined and condensed into a manageable form. Secondly two important experimental developments have occurred. The resolution that can be obtained is now of the order of 3 meV, which corresponds approximately to an energy of 30 kBK. This means that photoelectron spectroscopy can now obtain data with an accuracy similar to that achieved in standard thermodynamic experiments (such as specific heat experiments), thus facilitating a direct comparison of data from the two different types of experiment. The second important experimental advance is that one can now readily measure electron energy distributions over a solid angle of almost 4π . This yields valuable information whenever these electron energy distributions have anisotropies. It was decided, in view of these developments, to rework and expand the volume so as to do justice to the full potential of today's photoelectron spectroscopy. I have benefitted very much from the help of my group namely R. de Masi, D. Ehm, B. Eltner, F. Miiller, G. Nicolay, F. Reinert, D. Reinicke and in particular S. Schmidt. Without the dedicated effort of these collaborators the present edition could not have been produced. I am grateful to S. Neumann who typed the complete text with great skill. Thanks are due to the Springer Verlag for their expert help and patience.

内容概要

Since the completion of the manuscript for the first edition of Photoelectron Spectroscopy, the field has undergone a steady growth. Firstly, the theory has been refined and condensed into a manageable form. Secondly two important experimental developments have occurred. The resolution that can be obtained is now of the order of 3 meV, which corresponds approximately to an energy of 30 K. This means that photoelectron spectroscopy can now obtain data with an accuracy similar to that achieved in standard thermodynamic experiments (such as specific heat experiments), thus facilitating a direct comparison of data from the two different types of experiment. The second important experimental advance is that one can now readily measure electron energy distributions over a solid angle of almost 4π . This yields valuable information whenever these electron energy distributions have anisotropies.

书籍目录

1. Introduction and Basic Principles 1.1 Historical Development 1.2 The Electron Mean Free Path 1.3 Photoelectron Spectroscopy and Inverse Photoelectron Spectroscopy 1.4 Experimental Aspects 1.5 Very High Resolution 1.6 The Theory of Photoemission 1.6.1 Core-Level Photoemission 1.6.2 Valence-State Photoemission 1.6.3 Three-Step and One-Step Considerations 1.7 Deviations from the Simple Theory of Photoemission References

2. Core Levels and Final States 2.1 Core-Level Binding Energies in Atoms and Molecules 2.1.1 The Equivalent-Core Approximation 2.1.2 Chemical Shifts 2.2 Core-Level Binding Energies in Solids 2.2.1 The Born-Haber Cycle in Insulators 2.2.2 Theory of Binding Energies 2.2.3 Determination of Binding Energies and Chemical Shifts from Thermodynamic Data 2.3 Core Polarization 2.4 Final-State Multiplets in Rare-Earth Valence Bands 2.5 Vibrational Side Bands 2.6 Core Levels of Adsorbed Molecules 2.7 Quantitative Chemical Analysis from Core-Level Intensities References

3. Charge-Excitation Final States: Satellites 3.1 Copper Dihalides; 3d Transition Metal Compounds 3.1.1 Characterization of a Satellite 3.1.2 Analysis of Charge-Transfer Satellites 3.1.3 Non-local Screening 3.2 The 6-eV Satellite in Nickel 3.2.1 Resonance Photoemission 3.2.2 Satellites in Other Metals 3.3 The Gunnarsson-Schönhammer Theory 3.4 Photoemission Signals and Narrow Bands in Metals References

4. Continuous Satellites and Plasmon Satellites: XPS Photoemission in Nearly Free Electron Systems 4.1 Theory 4.1.1 General 4.1.2 Core-Line Shape 4.1.3 Intrinsic Plasmons 4.1.4 Extrinsic Plasmon Scattering: Plasmons and Background 4.1.5 The Total Photoelectron Spectrum 4.2 Experimental Results 4.2.1 The Core Line Without Plasmons 4.2.2 Core-Level Spectra Including Plasmons 4.2.3 Valence-Band Spectra of the Simple Metals 4.2.4 Simple Metals: A General Comment 4.3 The Background Correction References

5. Valence Orbitals in Simple Molecules and Insulating Solids 5.1 UPS Spectra of Monatomic Gases 5.2 Photoelectron Spectra of Diatomic Molecules 5.3 Binding Energy of the H₂ Molecule 5.4 Hydrides Isoelectronic with Noble Gases Neon (Ne) Hydrogen Fluoride (HF) Water (H₂O) Ammonia (NH₃) Methane (CH₄) 5.5 Spectra of the Alkali Halides 5.6 Transition Metal Dihalides 5.7 Hydrocarbons 5.7.1 Guidelines for the Interpretation of Spectra from Free Molecules 5.7.2 Linear Polymers 5.8 Insulating Solids with Valence d Electrons 5.8.1 The NiO Problem 5.8.2 Most Insulation

6. Photoemission of Valence Electrons from Metallic Solids in the One-Electron Approximation

7. Band Structure and Angular-Resolved Photoelectron Spectra

8. Surface States, Surface Effects

9. Inverse Photoelectron Spectroscopy

10. Spin-Polarized Photoelectron Spectroscopy

11. Photoelectron Diffraction

Appendix

Index

章节摘录

Secondly two important experimental developments have occurred. The resolution that can be obtained is now of the order of 3 meV, which corresponds approximately to an energy of 30 KBK. This means that photoelectronspectroscopy can now obtain data with an accuracy similar to that achieved in standard thermodynamic experiments (such as specific heat experiments) , thus facilitating a direct comparison of data from the two different types of experiment. The second important experimental advance is that one can now readily measure electron energy distributions over a solid angle of almost 4π . This yields valuable information whenever these electron energy distributions have anisotropies. It was decided, in view of these developments, to rework and expand the volume so as to do justice to the full potential of today's photoelectronspectroscopy. I have benefitted very much from the help of my group namely R. de Masi, D. Ehm, B. Eltner, F. Miiller, G. Nicolay, F. Reinert, D. Reinicke and in particular S. Schmidt. Without the dedicated effort of these collaborators the present edition could not have been produced.

编辑推荐

《光电子光谱学：原理和应用(第3版)》由胡夫尼编著。

It was decided , in view of these developments , to rework and expand the volume so as to do justice to the full potential of today's photoelectronspectroscopy. I have benefitted very much from the help of my group namely R. De Masi , D. Ehm , B. Eltner , F. Müller , G. Nicolay , F. Reinert , D. Reinicke and in particular S. Schmidt. Without the dedicated effort of these collaborators the present edition could not have been produced. I am grateful to S. Neumann who typed the complete text with great skill. Thanks are due to the Springer Verlag for their expert help and patience.

<<光电子光谱学>>

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>