

## X-ray Photoelectron Spectroscopy

This book presents an introduction to X-ray photoelectron spectroscopy (XPS). This method has been used for about 50 years in different research areas of physics, chemistry, and materials science, to study the electronic structure of surfaces. The textbook provides a very concise treatment of the subject. It is intended for readers who are looking for an overview of the XPS technique in order to evaluate its capabilities. Paul van der Heide deals with all classical aspects of XPS. He introduces the reader to the physical processes involved, describes the required instrumentation, outlines the quantitative analysis of the data, and discusses the interpretation of the spectra.

A strong emphasis is placed on the theoretical description of the photoionization process and of relevant secondary processes, using modern quantum-mechanical methods. The list of contents and the subject index guide the reader quickly to the parts of special individual interest.

In order to keep the book concise, some detailed or special aspects of XPS are omitted or are only treated briefly. Unfortunately, the book devotes only a few sentences to the use of synchrotron radiation as an X-ray source for XPS measurements, which has become increasingly popular in the last few years, due to the advantages of tunable photon energy, higher photon density,

and better spectral resolution compared to conventional X-ray tubes. Some very recent developments in XPS, such as measurements on reactive surfaces in gaseous atmospheres, are not mentioned at all. I think that the subject of data analysis by curve-fitting deserved to be given more space in the book, since this method is important for almost every potential user of XPS.

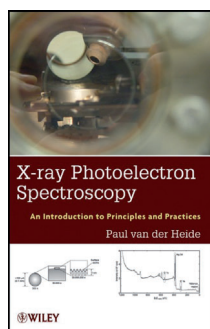
The list of references is not up-to-date. There are only a few references to recent literature in the field.

An extremely useful appendix lists methods that can deliver information complementary to XPS, with brief descriptions. The proper interpretation of XP spectra also requires some knowledge of the morphology of the sample surface, and therefore a further appendix explains different microscopic techniques for obtaining such information.

In summary, I recommend the book to newcomers to XPS who seek a review of the method. Such readers whose main interest is in the interpretation of XP spectra will benefit greatly from the book. Experts in the subject will probably not find the book very useful, as many aspects are not treated in sufficient depth for their purposes.

Axel Knop-Gericke  
Department of Inorganic Chemistry  
Fritz-Haber-Institut der Max-Planck-Gesellschaft  
Berlin (Germany)

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