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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 28893-2024

Replacing GB/T 28893-2012

**Surface chemical analysis - Auger electron spectroscopy and X-ray
photoelectron spectroscopy - Methods used to determine peak
intensities and information required when reporting results**

表面化学分析 俄歇电子能谱和X射线光电子能谱 测定峰强度的方法和报告结果所需的信息

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting is required.

This document replaces GB/T 28893-2012 "Surface chemical analysis - Auger electron spectroscopy and X-ray photoelectron spectroscopy for determination of peak intensity". Compared with GB/T 28893-2012, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

a) The terms and definitions have been changed (see Chapter 3, Chapter 3 of the 2012 edition);

b) The content of 6.3 has been changed and replaced with a modern approach that includes the treatment of coexisting chemical states (see 6.3, 6.3 of the 2012 edition).

This document is equivalent to ISO 20903:2019 "Surface chemical analysis - determination of peaks by Auger electron spectroscopy and X-ray photoelectron spectroscopy" Methods for determining the strength of a test and the information needed to report the results.

Introduction

The important feature of Auger electron spectroscopy and X-ray photoelectron spectroscopy is that they can obtain the surface area of solid samples (depth ~ 1nm~10nm) such analysis requires the determination of the intensity of the spectral peaks.

Several peak intensity measurement methods are available for AES and XPS. In practice, the choice of method will depend on the type of sample being analyzed, the performance of the instruments used and the available data acquisition and processing methods.

Surface chemical analysis Auger electron spectroscopy and X-ray photoelectron spectroscopy to measure the peak intensity Methods and information needed to report results

1 Scope

This document specifies the necessary information required in the reporting of analytical results for peak intensity measurements of Auger electron spectroscopy and X-ray photoelectron spectroscopy.

Information is also provided on the peak intensity measurement method and the uncertainty of the derived peak areas.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version

(including all amendments) applies to this document.

Note: GB/T 22461.1-2023 Vocabulary for surface chemical analysis Part 1: General terms and spectral terms (ISO 18115-1:2013, IDT)

3 Terms and definitions

For the purpose of this document, the terms and definitions given in ISO 18115-1 apply.

4 Symbols and abbreviations

The following symbols and abbreviations apply to this document.

A. peak area

tainabaseline)

eV.electronvolts

deltaE. channel width, in electron volts (eV)

5.1 General

Figure 1a) shows a portion of an X-ray photoelectron spectrum, with intensities indicated as kinetic energy increasing from left to right or binding energy increasing from right to left.