

ICS 71.040.40
CCS G 04



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

GB/T 30815-2014

**Surface chemical analysis -- Guidelines for preparation and
mounting of specimens for analysis**

表面化学分析 分析样品的制备和安装方法指南

(English Translation)

Issued on: June 24, 2014

Implemented on: February 1, 2015

Issued by: Standardization Administration of China

Table of Contents

Introduction
Introduction
1 Scope
2 Normative references
3 Terms and definitions
4 Symbols and abbreviations
5 1 General requirements
6 Samples Inspection
7 Sample Note

Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules.

This standard uses the translation method identical with ISO 18116:2005 "Preparation and Installation Guide Surface analysis of samples for chemical analysis." Correspondence between the consistency of the standards of international documents and normative references of the following documents.

--- GB/T 22461-2008 Surface chemical analysis - Vocabulary (ISO 18115:2001, IDT) the standard micro-beam analysis by the National Standardization Technical Committee (SAC/TC38) and focal points.

Introduction

This standard is intended to assist in the analysis of the sample surface by chemical analysis of the operation, installation and handling. Although this standard formulation method main If the Auger electron spectroscopy (AES), X-ray photoelectron spectroscopy (XPS) and secondary ion mass spectrometry (SIMS) and other surface analysis techniques to prepare but it can also be used for many other surface-sensitive analytical techniques, for example, ion scattering spectroscopy, low energy electron diffraction and electron energy loss spectroscopy, sample Ordnance Disposal affect the test results of these surface-sensitive analytical techniques. AES, XPS and SIMS to a few nanometers thickness of the surface layer Min Sense, such a thin layer due to import samples or surface analysis chamber prior to treatment was severely disrupted.

Correct sample preparation and chemical analysis of the surface mounting is particularly

critical. Improper preparation may result in surface composition changes and Analysis of the results unreliable. Be careful to install the sample, in order to minimize or avoid the mounting operation and the introduction of contaminants. In order to analyze Results representative of the original sample, preparation and installation should be kept in the surface state of the sample. This standard expresses the surface analysis by using any surface-sensitive analytical techniques, in order to affect the method of sample preparation is reduced to the minimum possible need to use. This standard also expresses it does not affect the analysis of the information required to install the samples.

Preparation of Surface analytical sample surface chemical analysis and installation guide

1 Scope

This standard provides a surface samples for chemical analysis and surface treatment method of installation guide. Purpose is to help analysts understand the use of Russian Auger electron spectroscopy specialized sample handling, secondary ion mass spectrometry and X-ray photoelectron spectroscopy surface analysis techniques to analyze the necessary condition.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

ISO 18115 Surface chemical analysis - Vocabulary (Surfacechemicalanalysis-Vocabulary)

3 Terms and Definitions

Terms and definitions defined in ISO 18115 apply to this document.

4 Symbols and Abbreviations

AES. Augerelectronspectroscopy, Auger electron spectroscopy;

SIMS. secondary-ionmassspectrometry, secondary ion mass spectrometry;

XPS. X-rayphotoelectronspectroscopy, X-ray photoelectron spectroscopy.

5 General requirements

General information about the sample handling two books [1,2] are applicable. Cleanliness of surface-sensitive analytical techniques required much higher than the promise More other forms of analysis. Should not bare hand contact with the sample and the sample holder. Minimizing or eliminating the surface analysis of the proposed operation. Fingerprint

carrying a can Analysis of the material can contaminate surfaces. Hand cream, moisturizing cream and other skin material is not suitable for high vacuum.

Although substantially similar AES, XPS and SIMS sample processing methods, but also some differences. Typically AES and SIMS sample system Device needs more careful, because there may be an electron beam or an ion beam of charged or damage, or both are present. Samples of these three techniques required Obviously not prepared at the same time, this standard will be labeled.

6 Inspection, samples

Samples should be simple visual inspection, optical microscopy can be used. Should be checked at least residue, particles, fingerprints, adsorbent, contaminants or Other foreign substances entered in the test log book.

It may not be observed (for example, through the observation window or outside the vacuum system after the obvious visual characteristics of the sample into the sample surface analysis instruments Available imaging methods). So you may need to sample analysis area surrounding physical identification (such as scribing or oily pen identification tag) to