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

GB/T 28894-2012

**Surface chemical analysis -- Handling of specimens prior to
analysis**

表面化学分析 分析前样品的处理

(English Translation)

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Foreword

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

This standard uses the translation method identical with ISO 18117:2009 "Surface chemical analysis of samples before analysis process." for ease of use, this standard made the following editorial changes.

--- Use the "standard" instead of "this International Standard." the standard micro-beam analysis by the National Standardization Technical Committee (SAC/TC38) and focal points.

Introduction

The standard surface for people to submit samples for chemical analysis of sample handling and delivery to the sample analyzes provide the guidance. Exhausted Pipe primarily for Auger electron spectroscopy (AES), X-ray photoelectron spectroscopy (XPS) and secondary ion mass spectrometry (SIMS) and write, but these methods Also be used for other surface-sensitive analytical measurements. AES, XPS and SIMS is typically of a few nanometers (nm) sensitive surface layer thickness. such Sheet due to incorrect sample handling severely affected [1,2]. Proper handling and preparation of samples for analysis is extremely important and improper handling can cause the surface composition changes and data can not be trusted.

This standard is buying and who supplied the sample surface analysis provider or surface analysis equipment used. The best approach depends on in particular sample and the required information, and the present standard of each sample type provides illustrative examples of these types of samples are Sample Surface owners and analysts commonly encountered. The standard recommendation concerning the origin of the samples on the sample provider, need to address specific issues or the required information, and any special sample preparation, handling or transport of the desired method, and surface

analysis as soon as possible to discuss personnel.

This standard can not rely on the use of ISO 18116 and independent [4], which is the standard used to guide the analyst surface analysis of the sample system Preparation and installation.

Surface chemical analysis and processing of samples prior to analysis

1 Scope

This standard specifies the requirements for the processing and storage vessel surface chemical analysis of samples. This standard applies to equipment used in surface chemical analysis Families understand the special requirements for surface chemical analysis sample handling techniques, especially Auger electron spectroscopy (AES), secondary ion mass spectrometry (SIMS) and X-ray photoelectron spectroscopy (XPS or ESCA). This standard also applies to other sensitive surface composition analysis techniques, such as TXRF. Correct in a particular instance, a particular sample, need more attention.

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.

GB/T 22461-2008, Surface chemical analysis - Vocabulary (ISO 18115:2001, IDT) ISO 18116:2005, surface preparation and chemical analysis of surface analysis method of fixing guide samples (Surfacechemical analysis-Guidelinesforpreparationandmountingofspecimensforanalysis)

3 Terms and Definitions

Terms and definitions GB/T 22461-2008 defined apply to this document.

4 Symbols and abbreviations

AES Auger electron spectroscopy AFM AFM ESCA electron spectroscopy for chemical analysis PTFE Teflon SEM Scanning Electron Microscope SIMS Secondary Ion Mass Spectrometry TXRF total reflection X-ray fluorescence spectrometry XPS X-ray photoelectron spectroscopy

5 Description, standard configuration

Chapter 7 discusses additional matters affecting the composition of the surface will be considered, such as the origin of the samples and the samples previously analyzed. These effects the file you want to be delivered along with careful sample handling and packaging.

Chapter 8 provides the minimum required to make the sample surface contamination of sample treatment the specific recommendations are also given on during sample handling and transfer to a storage container to maintain and increase sample cleanliness of the range of options Sample handling methods. Chapter 9 expresses the different sample containers may be used for different conditions, also discussed with the relevant sample storage time, Humidity and temperature. Chapter 10 and Chapter 11, highlighting the impact on the measurement results of surface analysis sample preparation, implementation of the provisions of sample handling step when suddenly, the analysis results of samples from owners and analysts to improve the benefit.