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

GB/T 30705-2014

**Microbeam analysis -- Electron probe microanalysis --
Guidelines for the determination of experimental parameters for
wavelength dispersive spectroscopy**

微束分析 电子探针显微分析 波谱法实验参数测定导则

(English Translation)

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Foreword

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

This standard uses redrafted Law Amendment uses ISO 14594:2009 "micro-beam analysis electron probe microanalysis spectroscopy experiment parameters Number Determination Guidelines "(in English).

This standard and ISO 14594:2009 "micro-beam analysis of experimental parameters electron probe microanalysis spectroscopy Determination Guide" (English Version) the main technical differences.

--- With GB/T 27025.2008 instead of ISO Guide25.1990;

--- The Chapter 7 ISO Guide25. 13.2 shall be revised to 1990 GB/T 27025-2008 5.10.

The standard micro-beam analysis by the National Standardization Technical Committee (SAC/TC38) and focal points.

This standard was drafted. Shanghai Institute of Ceramics, Chinese Academy of Sciences.

1 Scope

This standard specifies the incident electron beam electron microprobe analysis, the general principles spectrometer and experimental parameters of the sample measured, and Regulation Set the beam, the beam current density, the dead time, wavelength resolution, backing, area analysis, process analysis measured the depth and volume analysis.

This standard applies to the analysis of the electron beam vertically polished specimens, for the other experimental conditions, these can only be used as experimental parameters reference.

This standard does not apply to spectroscopy.

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 27025-2008 testing and calibration laboratories General requirements (ISO/IEC 17025:2005, IDT)

3 Terms and Definitions

The following terms and definitions apply to this document.

Analysis area all signals can be detected or a predetermined percentage of the two-dimensional area of the sample surface signals.

Depth of analysis analysis depth from the bottom surface of the sample volume to effect the vertical distance, the distance through which the signal can be detected or a predetermined percentage of the full signal.

Analysis volume Sample three-dimensional X-ray emission of the region, all signals in the region or a predetermined percentage of the signal can be detected.

Backing Background

X-rays generated by a continuous X-ray spectrum of the non-feature ingredients.

Beam beam current

Focused electron beam current.

Beam current density Beam is incident on a sample basis.