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**Calibration Specification for Ellipsometers
(English Translation)**

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Appendix D Ellipsometric Optical Model of Silicon Oxide on Silicon Surface (15)

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Introduction

JJF 1001 "General Metrology Terms and Definitions", JJF 1059.1 "Assessment and Expression of Measurement Uncertainty" and JJF 1071 "Rules for Compilation of National Metrology and Calibration Standards" together constitute the basic series of specifications supporting the compilation of this standard:

This specification is published for the first time:

Ellipsometer Calibration Specifications

1 Scope

This specification applies to the calibration of ellipsometers within the wavelength range of 250nm~2000nm:

2 References

This specification references the following documents:

JJF 1497 Polarizer Calibration Specification GJB/J5463 Optical Film Refractive Index and Thickness Tester Verification Regulations for dated references, only the dated version applies to this specification; for undated references document, its latest version (including all amendments) applies to this specification:

3 Terminology and units of measurement 3:1 plane of incidence of incident surface the surface formed by the incident beam and the reflected beam [SEMIE141-0705 ellipsometric device 6]: Incident (reflection) angle gauge Defined as the angle between the incident

(reflected) light and the normal to the sample surface, see Figure 1 (a):

(a) Schematic diagram of incident surface (b) Schematic diagram of ellipse angle Fig:1
Schematic diagram of incident surface and ellipsometric angle n -sample surface normal;
 θ -incident angle; mode of rs, rp-s, p polarization complex amplitude reflection
coefficient;
 δ , δ_p -s, phase of p-polarized complex-amplitude reflection coefficients