Summit to: Monte Carlo Methods in Electron Spectroscopy Analysis

ISO Standard: Microbeam analysis-Scanning electron microscopy - Method for evaluating critical dimensions by CD-SEM (ISO 21466：2019) development process

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EXTENDED ABSTRACT:

An International Standard in Microbeam Analysis--Microbeam analysis — Scanning electron microscopy - Method for evaluating critical dimensions by CD-SEM (ISO 21466： 2019) has been officially issued by the International Organization for Standardization (ISO).This standard is the first international standard for semiconductor linewidth measurement. The standard document specifies the structure model and its related parameters for characterizing the etching line width by using CD-SEM imaging, Monte Carlo simulation model and scanning profile line calculation method, MBL database construction method and file format, image matching and fitting program and CD parameter determination method. Compared with the traditional empirical threshold method, this measurement method can give an accurate CD value, and expand the linewidth measurement from a single parameter to include the information of structure and morphology features. It is applicable to such single isolated or dense line feature patterns as gates, and sizes as small as 10nm on wafers. This not only determines the industry standard for the accurate evaluation of semiconductor etching linewidth CD-SEM, It also provides a reference for other measurement methods of general nanometer size.

Keywords：Critical Dimensions; CD-SEM; International Standard

REFERENCES

[1] ISO standard ：Microbeam analysis - Scanning electron microscopy - Method for evaluating critical dimensions by CD-SEM (ISO 21466), https://www.iso.org/standard/70944.html

BIOGRAPHY

Zou Yanbo was born in 1981. She received Ph.D. degree from University of Science and Technology of China. She is a Lecturer with the School of Physics & Electronic Engineering, Xinjiang Normal University. His research interests include interaction of electrons with matter and computational materials science.

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