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Terms of microlithography technology for microelectronics

微电子学微光刻技术术语

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed and coordinated by the National Technical Committee for Semiconductor Equipment and Materials Standardization (SAC/TC203). This document was drafted by: Institute of Microelectronics, Chinese Academy of Sciences. The main drafters of this document are: Chen Baoqin, Wang Xiang, Li Hewei, Wang Liyu, Li Xintao, Feng Boru, Xue Lijun, Hao Meiling and Xue Cairong. Microelectronics Microlithography Terminology

1 Scope

GB/T 44928-2024 is the Chinese terminology of microlithography for microelectronics: the vocabulary of the process by which a pattern is put onto a silicon wafer, which is the process that decides what a semiconductor industry can and cannot make. It is a substantial dictionary, 214 pages of definitions organised into nine subject areas: microelectronic lithography in general; advanced lithography, covering immersion, EUV, multiple patterning and the resolution enhancement techniques; patterning and pattern data processing; the photosensitive materials, chrome plates and substrates; photomask

technology; the lithography process itself, exposure, etching and micro- and nano-fabrication; electron beam mask making and direct write; the measurement and evaluation of lithography and mask quality parameters; and the mask making and lithography equipment. It closes with an index. Given where lithography sits in the current technology and trade landscape, a national terminology standard in this field is not a housekeeping document. For a fab, an equipment or materials supplier, a patent attorney or a translator working on Chinese semiconductor material, this is the reference vocabulary.

This document defines microelectronics lithography, advanced lithography, microlithography patterning and patterning technology related to microelectronics microlithography. Data processing technology, microlithography photosensitive materials, chrome plates and substrate materials, photomask technology, photolithography process (exposure, etching and micro-nano processing) technology, electron beam mask manufacturing and direct writing technology, lithography and mask quality parameter measurement and evaluation, mask manufacturing equipment and microlithography equipment, etc. and definitions. This document is applicable to teaching, scientific research, production, application, trade and technical exchange in the field of microelectronics microlithography technology.

2 Normative references

This document has no normative references.

3.1 Microelectronics Lithography

3.1.1 Microelectronics Research on solid functional materials (mainly semiconductor materials) and the development and production technology of microelectronic components based on these functional materials The discipline includes its physical properties, working principles, design theory of circuit integration and system integration, and production process and manufacturing technology.

3.1.2 Semiconductor materials, semiconductor physics, semiconductor devices, microelectronics, semiconductor integrated circuit design and manufacturing process technology and industrialization A comprehensive science that integrates both science and technology.