

CLAIMS

What is claimed is:

1. A metrology target comprising a plurality of periodic structures and produced by a lithography tool having orthogonal production axes X and Y, wherein at least one of the periodic structures is oblique with respect to axes X and Y.
2. The metrology target of claim 1, configured as an imaging target and having the periodic structures of at least one target layer configured to be oblique with respect to axes X and Y and at two non-parallel directions.
3. The metrology target of claim 1, configured as a Moiré-effect-based target.
4. The metrology target of claim 3, having the periodic structures of at least one target layer configured to be oblique with respect to axes X and Y and at two non-parallel directions.
5. The metrology target of any one of claims 2-4, comprising at least three layers, wherein the oblique periodic structures are in one of the layers.
6. The metrology target of any one of claims 1-5, having one measurement direction oblique to the X axis of the lithography tool, wherein the oblique periodic structures are of two types differing in pitch and/or CD (critical dimension).
7. The metrology target of any one of claims 1-6, wherein the oblique periodic structures are set to fill rectangles with sides along the X and Y axes.
8. The metrology target of any one of claims 1-7, wherein the oblique periodic structures are set to fill a specified space designed according to available wafer real estate.
9. The metrology target of any one of claims 1-8, wherein the oblique periodic structures are set to fill convex quadrilateral designed according to available wafer real estate.
10. The metrology target of claim 1, configured as a SEM (scanning electron microscopy) target, having two partly overlapping, alternating periodic structures which are both oblique with respect to the X axis.
11. The metrology target of any one of claims 1-10, wherein elements of the periodic structures are segmented.
12. The metrology target of claim 11, wherein segmentation of the elements is two-dimensional.

13. The metrology target of claim 11, wherein a pitch of the segmentation is one fifth or less of a pitch of the corresponding periodic structure.
14. The metrology target of claim 11, wherein the segments are rectangular.
15. The metrology target of any one of claims 1-14, wherein the oblique periodic structures form angles of between 20° and 70° respect to corresponding axes X and Y.
16. The metrology target of any one of claims 1-14, wherein the target further comprises at least one intermediate layer having assist features between two of the periodic structures.
17. The metrology target of claim 16, wherein the assist features are oblique with respect to axes X and Y.
18. The metrology target of any one of claims 1-17, wherein at least two of the periodic structures are placed side-by-side.
19. A target design file of the metrology targets of any one of claims 1-18.
20. Metrology measurements of the metrology targets of any one of claims 1-18.
21. A metrology measurement method of the metrology targets of any one of claims 1-18, wherein a given metrology measurement algorithm is adjusted by image processing and/or signal modelling to derive corresponding signals from the oblique periodic structures.
22. A target design method comprising configuring at least one periodic structure of a metrology target, which is produced by a lithography tool having orthogonal production axes X and Y, to be oblique with respect to axes X and Y.
23. A target design method of claim 22, further comprising identifying, in a device design, oblique structures with respect to the axes X and Y and designing the at least one oblique periodic structure of the metrology target at a same layer and at a same angle to the axes X and Y as the identified oblique structures.