

**OVERLAY MEASUREMENT APPARATUS, LITHOGRAPHIC APPARATUS, AND
DEVICE MANUFACTURING METHOD USING SUCH OVERLAY
MEASUREMENT APPARATUS**

ABSTRACT

An overlay measurement apparatus has a polarized light source for illuminating a sample with a polarized light beam and an optical system to capture light that is scattered by the sample. The optical system includes a polarizer for transmitting an orthogonal polarization component that is orthogonal to a polarization direction of the polarized light beam. A detector measures intensity of the orthogonal polarization component. A processing unit is connected to the detector, and is arranged to process the orthogonal polarization component for overlay metrology measurement using asymmetry data derived from the orthogonal polarization component.

(Figure 2)