

SYSTEM AND METHOD FOR AUTOMATED FOCUS MEASURING OF A LITHOGRAPHY TOOL

ABSTRACT OF THE DISCLOSURE

A system and method are used to calibrate a focus portion of an exposure section of a lithography tool. A wafer is exposed so that a resulted or formed patterned image is tilted with respect to the wafer. The tilting can be imposed based on controlling a wafer stage to tilt the wafer or a reticle stage to tilt the reticle. The wafer is developed. Characteristics of the tilted patterned image are measured with a portion of the lithography tool to determine focus parameters of an exposure system. The portion can be an alignment system. The measuring step can measure band width and/or band location of the tilted patterned image. Sometimes, more than one patterned image is formed on the wafer, then the measuring step can measure distance between bands and shifting of the bands with respect to a central axis of the wafer. The focus parameters can be focus tilt errors and/or focus offset. The focus parameters are used to perform calibration. Calibration is done by either automatically or manually entering compensation values for the measured focus parameters into the lithography tool.

Figure 10