Abstract

SYSTEMS AND METHODS FOR METROLOGY WITH LAYER-SPECIFIC ILLUMINATION SPECTRA

A metrology system includes an image device and a controller. The image device includes a spectrally-tunable illumination device and a detector to generate images of a sample having metrology target elements on two or more sample layers based on radiation emanating from the sample in response to illumination from the spectrally-tunable illumination device. The controller determines layer-specific imaging configurations of the imaging device to image the metrology target elements on the two or more sample layers within a selected image quality tolerance in which each layer-specific imaging configuration includes an illumination spectrum from the spectrally tunable illumination device. The controller further receives one or more images of the metrology target elements on the two or more sample layers generated using the layer-specific imaging configurations. The controller further provides a metrology measurement based on the one or more images of the metrology target elements on the two or more sample layers.

Figure 1