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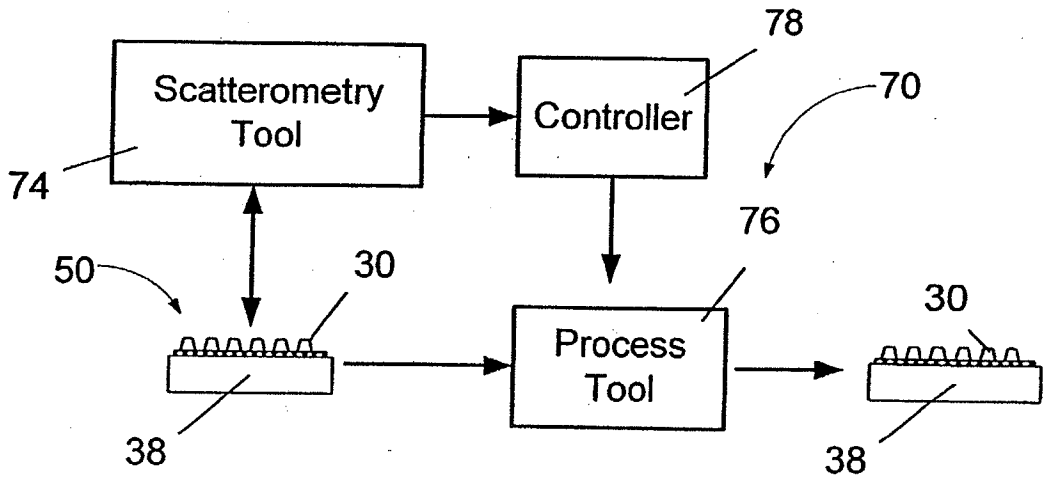
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(54) Title: METHOD OF USING HIGH YIELDING SPECTRA SCATTEROMETRY MEASUREMENTS TO CONTROL SEMICONDUCTOR MANUFACTURING PROCESSES AND SYSTEMS FOR ACCOMPLISHING SAME



(57) Abstract: A method of using high yielding spectra scatterometry measurements to control semiconductor manufacturing processes and systems for accomplishing same is disclosed. In one embodiment, the method comprises providing a library comprised of at least one target optical characteristic trace of a grating structure comprised of a plurality of gate stacks, the target corresponding to a semiconductor device having at least one desired electrical performance characteristic, proving a substrate 38 having a least one grating structure 50 formed thereabove, the formed grating structure 5o comprpised of a plurality of gate stacks 30, illuminating at least one grating structure 50 formed above said substrate 38, measuring light reflected off of the grating structure 50 formed above the substrate 38 to generate an optical characteristic trace for the formed grating structure 50, and comparing the generated optical characteristic trace to the target trace.

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