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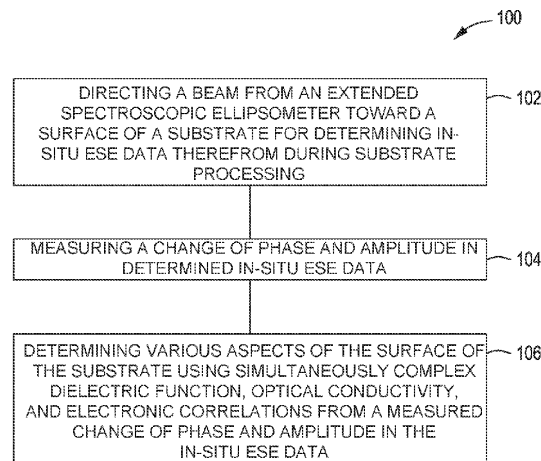


FIG. 1

(57) Abstract: Methods and apparatus for processing a substrate are provided herein. For example, a method of processing a substrate using extended spectroscopic ellipsometry (ESE) includes directing a beam from an extended spectroscopic ellipsometer toward a surface of a substrate for determining in-situ ESE data therefrom during substrate processing, measuring a change of phase and amplitude in determined in-situ ESE data, and determining various aspects of the surface of the substrate using simultaneously complex dielectric function, optical conductivity, and electronic correlations from a measured change of phase and amplitude in the in-situ ESE data.

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