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PROCESS SIMULATION MODEL CALIBRATION USING CD-SEM

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Computer-implemented methods of optimizing a process simulation model that predicts a result of a semiconductor device fabrication operation to process parameter values characterizing the semiconductor device fabrication operation are disclosed. The methods involve generating cost values using a computationally predicted result of the semiconductor device fabrication operation and a metrology result produced, at least in part, by performing the semiconductor device fabrication operation in a reaction chamber operating under a set of fixed process parameter values. The determination of the parameters of the process simulation model may employ pre-process profiles, via optimization of the resultant postprocess profiles of the parameters against profile metrology results. Cost values for, e.g., optical scatterometry, scanning electron microscopy and transmission electron microscopy may be used to guide optimization.

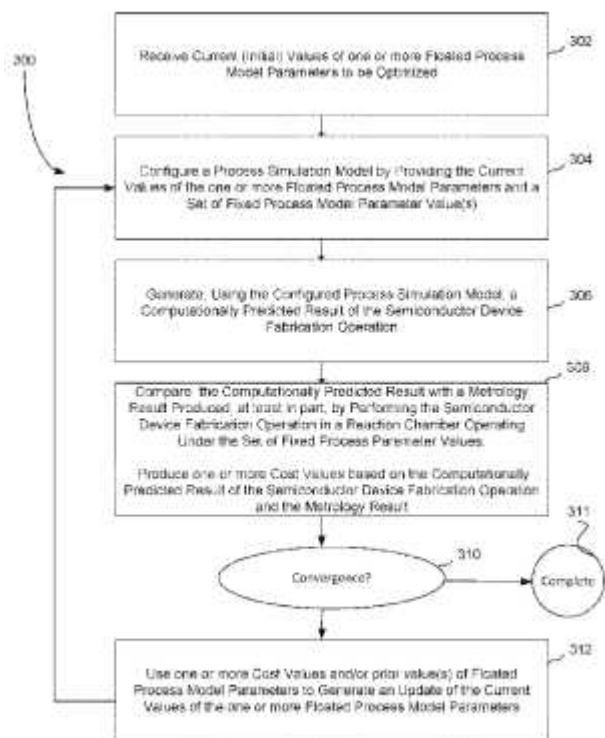


FIG. 3