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(54) Title: IN-SITU OZONE CURE FOR RADICAL-COMPONENT CVD

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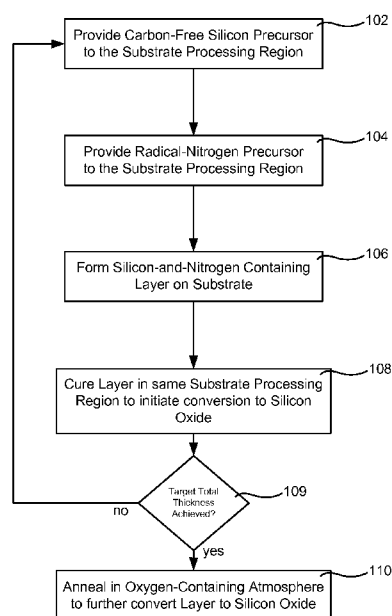


FIG 1

(57) Abstract: Methods of forming a dielectric layer are described. The methods include the steps of mixing a silicon-containing precursor with a plasma effluent, and depositing a silicon-and-nitrogen-containing layer on a substrate. The silicon-and-nitrogen-containing layer is converted to a silicon-and-oxygen-containing layer by curing in an ozone-containing atmosphere in the same substrate processing region used for depositing the silicon-and-nitrogen-containing layer. Another silicon-and-nitrogen-containing layer may be deposited on the silicon-and-oxygen-containing layer and the stack of layers may again be cured in ozone all without removing the substrate from the substrate processing region. After an integral multiple of dep-cure cycles, the conversion of the stack of silicon-and-oxygen-containing layers may be annealed at a higher temperature in an oxygen-containing environment.



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