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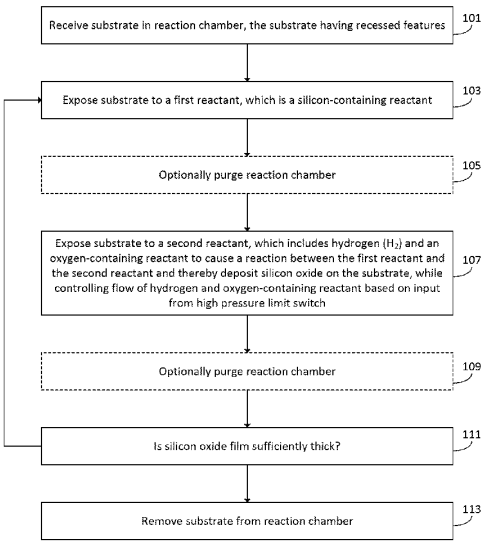


FIG. 1

(57) Abstract: Various embodiments herein relate to methods and apparatus for depositing silicon oxide using thermal ALD or thermal CVD. In one aspect of the disclosed embodiments, a method for depositing silicon oxide is provided, the method including: (a) receiving the substrate in a reaction chamber; (b) introducing a first flow of a first reactant into the reaction chamber and exposing the substrate to the first reactant, where the first reactant includes a silicon-containing reactant; (c) introducing a second flow of a second reactant into the reaction chamber to cause a reaction between the first reactant and the second reactant, (i) where the second reactant includes hydrogen (H2) and an oxygen-containing reactant, (ii) where the reaction deposits silicon oxide on the substrate, and (iii) where the reaction is initiated when a pressure in the reaction chamber is greater than 10 Torr and equal to or less than about 40 Torr.

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