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(54) Title: CURE METHODS FOR CROSS-LINKING SI-HYDROXYL BONDS

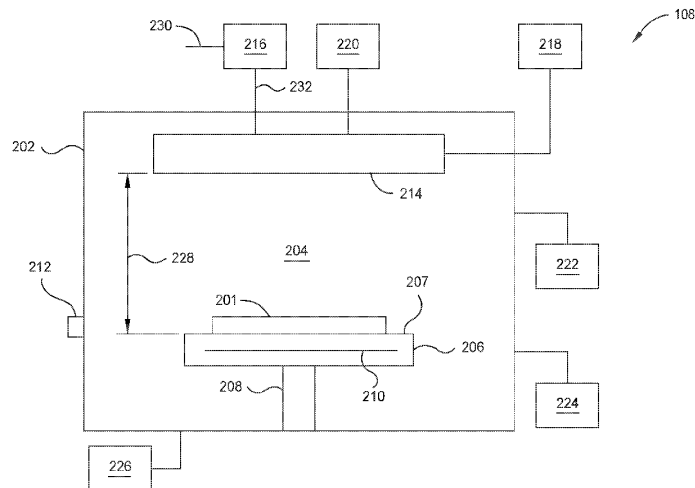


FIG. 2

(57) Abstract: Embodiments described herein provide a method of forming a silicon-and- oxygen-containing layer having covalent Si-O-Si bonds by cross-linking terminal silanol groups. The method includes positioning a substrate in a chamber. The substrate has one or more trenches including a width of 10 nanometers (nm) or less, and an aspect ratio of 2:1 or greater. The aspect ratio is defined by a ratio of a depth to the width of the one or more trenches. A silicon-and-oxygen-containing layer is disposed over the one or more trenches. The silicon-and-oxygen-containing layer has terminal silanol groups. The substrate is heated, and the silicon-and- oxygen-containing layer is exposed to an ammonia or amine group-containing precursor distributed across a process volume.

[Continued on next page]

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