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(54) Title: CONFORMAL SILICON OXIDE FILM DEPOSITION

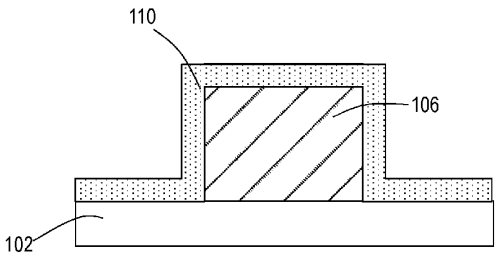


FIG. 1B

(57) Abstract: Methods for depositing a silicon-containing film on a substrate are described. The method comprises heating a processing chamber to a temperature greater than or equal to 200° C; maintaining the processing chamber at a pressure of less than or equal to 300 Torr; coflowing a silicon precursor and nitrous oxide (N_2O) into the processing chamber, and depositing a conformal silicon-containing film on the substrate. The silicon-containing film has dielectric constant (k-value) in a range of from about 3.8 to about 4.0, has a breakdown voltage of greater than 8 MV/cm at a leakage current of 1mA/cm^2 and has a leakage current of less than 1nA/cm^2 at 2MV/cm.

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