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(54) Title: METHOD FOR DEPOSITING AN AMORPHOUS CARBON FILM WITH IMPROVED DENSITY AND STEP COVERAGE

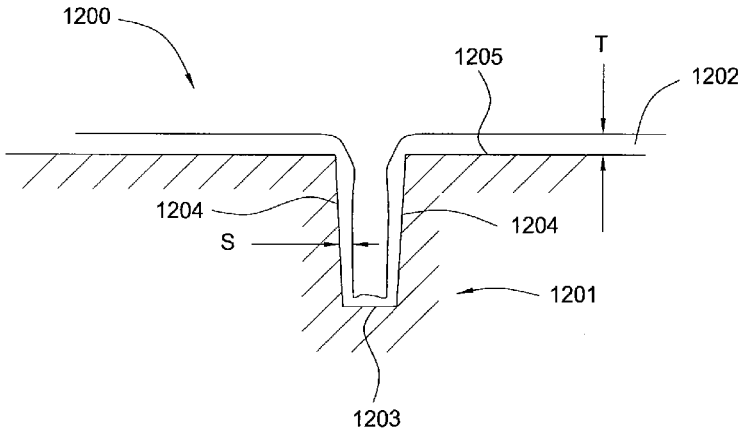


FIG. 12

(57) Abstract: A method for depositing an amorphous carbon layer on a substrate includes the steps of positioning a substrate in a chamber, introducing a hydrocarbon source into the processing chamber, introducing a heavy noble gas into the processing chamber, and generating a plasma in the processing chamber. The heavy noble gas is selected from the group consisting of argon, krypton, xenon, and combinations thereof and the molar flow rate of the noble gas is greater than the molar flow rate of the hydrocarbon source. A post-deposition termination step may be included, wherein the flow of the hydrocarbon source and the noble gas is stopped and a plasma is maintained in the chamber for a period of time to remove particles therefrom.

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