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(54) Title: PULSED-PLASMA DEPOSITION OF THIN FILM LAYERS

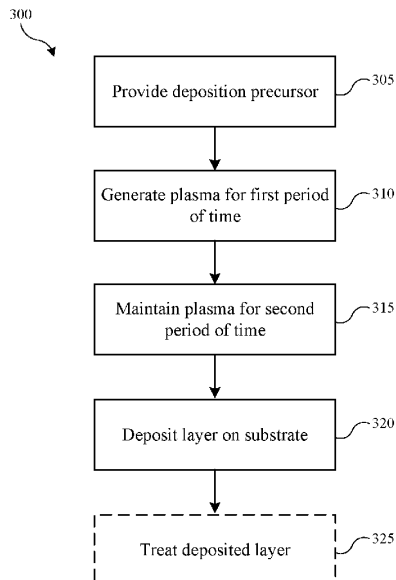


FIG. 3

(57) Abstract: Examples of the present technology include semiconductor processing methods that may include generating a plasma from a deposition precursor in a processing region of a semiconductor processing chamber. The plasma may be generated at a delivered power within a first period of time when plasma power is delivered from a power source operating at a first duty cycle. The methods may further include transitioning the power source from the first duty cycle to a second duty cycle after the first period of time. A layer may be deposited on a substrate in the processing region of the semiconductor processing chamber from the generated plasma. The layer, as deposited, may be characterized by a thickness of 50 Å or less. Exemplary deposition precursors may include one or more silicon-containing precursors, and an exemplary layer deposited on the substrate may include an amorphous silicon layer.

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