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(54) Title: CARBON BASED DEPOSITIONS USED FOR CRITICAL DIMENSION CONTROL DURING HIGH ASPECT RATIO FEATURE ETCHES AND FOR FORMING PROTECTIVE LAYERS

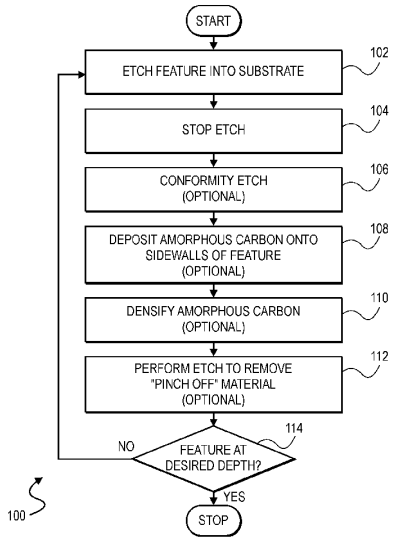


FIG. 1

(57) Abstract: Fabricating a semiconductor substrate by (a) vertical etching a feature having sidewalls and a depth into one or more layers formed on the semiconductor substrate and (b) depositing an amorphous carbon liner onto the sidewalls of the feature. Steps (a) and optionally (b) are iterated until the vertical etch feature has reached a desired depth. With each iteration of (a), the feature is vertical etched deeper into the one or more layers, while the amorphous carbon liner resists lateral etching of the sidewalls of the feature. With each optional iteration of (b), the deposited amorphous carbon liner on the sidewalls of the feature is replenished.

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