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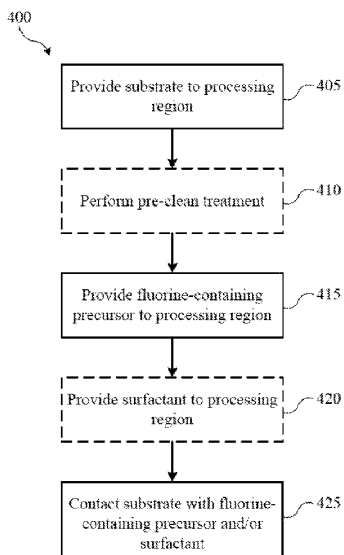


FIG. 4

(57) Abstract: Exemplary semiconductor processing methods may include providing a substrate to a processing region of a semiconductor processing chamber. The substrate may include an alternating stack of materials. A feature may extend through the alternating stack of materials. One material of the alternating stack of materials may include a silicon-containing material. A native oxide material may be disposed on at least a portion of exposed surfaces of the silicon-containing material. The methods may include performing a pre-clean treatment on the substrate. The methods may include providing a fluorine-containing precursor to the processing region. The methods may include contacting the substrate with the fluorine-containing precursor, wherein the contacting removes native oxide from the silicon-containing material.

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