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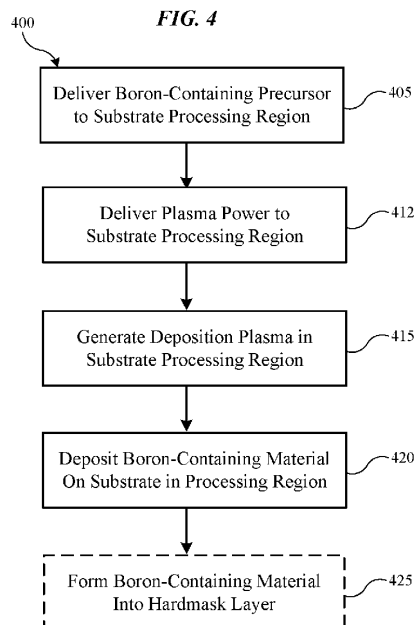
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(54) Title: DEPOSITION OF LOW-STRESS BORON-CONTAINING LAYERS



(57) Abstract: Examples of the present technology include semiconductor processing methods to form boron-containing materials on substrates. Exemplary processing methods may include delivering a deposition precursor that includes a boron-containing precursor to a processing region of a semiconductor processing chamber. A plasma may be formed from the deposition precursor within the processing region of the semiconductor processing chamber. The methods may further include depositing a boron-containing material on a substrate disposed within the processing region of the semiconductor processing chamber, where the substrate is characterized by a temperature of less than or about 50 °C. The as-deposited boron-containing material may be characterized by a surface roughness of less than or about 2 nm, and a stress level of less than or about -500 MPa. In some embodiments, a layer of the boron-containing material may function as a hardmask.

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