OXIDATIVE CONVERSION IN ATOMIC LAYER DEPOSITION PROCESSES

ABSTRACT

A method for processing a substrate is described. A first reactant in vapor phase is introduced into a reaction chamber having the substrate therein. The first reactant is allowed to be adsorb onto the substrate surface. The non-reactive portion of the first reactant is purged from the reaction chamber after a flow of the first reactant has ceased. The second reactant is introduced in vapor phase into the reaction chamber while the first reactant is adsorbed onto the substrate surface. The second reactant comprises a 1:1:1 ratio of dihydrogen (H2), a nitrogen-containing reactant, and an oxygen-containing reactant. A plasma is ignited based on the second reactant. The substrate surface is exposed to the plasma. The plasma is extinguished. Gas from the reaction chamber is purged.

FIG. 1