

ABSTRACT

There is included (a) loading a substrate where a conductive metal-element-containing film is exposed on a surface of the substrate into a process chamber under a first temperature; (b) supplying a reducing gas to the substrate while raising a temperature of the substrate to a second temperature higher than the first temperature in the process chamber; (c) forming a first film, which contains silicon and at least one selected from the group of nitrogen and carbon and does not contain oxygen, on the metal-element-containing film, by supplying a first process gas, which does not include an oxidizing gas, to the substrate under the second temperature in the process chamber; and (d) forming a second film, which contains silicon, oxygen, carbon, and nitrogen, on the first film such that the second film is thicker than the first film, by supplying a second process gas, which includes an oxidizing gas, to the substrate under a third temperature higher than the first temperature in the process chamber.

FIG. 4