WHAT IS CLAIMED IS:

1. A method of processing a substrate, comprising:

providing the substrate that includes a first material containing a first element and a second material containing a second element, the second material being different from the first material, wherein a concave portion is formed on a surface of the substrate, a bottom surface of the concave portion is composed of the second material, a side surface of the concave portion is composed of the first material, in contact with the bottom surface, and perpendicular to the bottom surface, and a top surface of the concave portion is composed of the first material, not in contact with the bottom surface, and parallel to the bottom surface;

(a) forming a film formation suppression layer on a surface of thea first material ~~of a concave portion of the substrate~~, by supplying a precursor to the substrate ~~provided with the concave portion on a surface of the substrate~~ to adsorb at least a portion of a molecular structure of molecules constituting the precursor on the surface of the first material ~~of the concave portion, the concave portion having a top surface and a side surface composed of the first material containing a first element and a bottom surface composed of a second material containing a second element different from the first element~~; and

(b) growing a film on a surface of the second material ~~of the concave portion~~ by supplying a film-forming material to the substrate having the film formation suppression layer formed on the surface of the first material;

(c) forming, before performing (a), a hydroxyl group termination on the surface of the first material; and

(d) removing, after performing (c) and before performing (a), the hydroxyl group termination formed on the surface of the second material,

wherein in (c), the hydroxyl group termination is formed on the surface of the first material and on the surface of the second material by supplying a reaction material to the substrate to oxidize the surface of the first material and the surface of the second material, and

wherein in (d), the hydroxyl group termination formed on the surface of the second material is removed while retaining the hydroxyl group termination formed on the surface of the first material, by heating the substrate to sublimate an oxide formed on the surface of the second material.

~~2. The method of Claim 1, wherein a hydroxyl group termination is formed on the surface of the first material before performing (a).~~

2~~3~~. The method of Claim 1~~2~~, wherein an amount of hydroxyl group terminations on the surface of the first material before performing (a) is larger than an amount of hydroxyl group terminations on the surface of the second material before performing (a).

3~~4~~. The method of Claim 1~~2~~, wherein a hydroxyl group termination is not formed on the surface of the second material before performing (a).

~~5. The method of any of Claims 1 to 4, further comprising:~~

~~(c) forming a hydroxyl group termination on the surface of the first material before performing (a).~~

~~6. The method of Claim 5, wherein in (c), the hydroxyl group termination is formed on the surface of the first material by supplying a reaction material to the substrate to oxidize the surface of the first material.~~

~~7. The method of Claim 5 or 6, wherein in (c), a hydroxyl group termination is formed on the surface of the second material, and~~

~~wherein the method further comprises:~~

~~(d) removing the hydroxyl group termination formed on the surface of the~~

~~second material after performing (c) and before performing (a).~~

~~8. The method of Claim 7, wherein in (c), the hydroxyl group termination is formed on the surface of the second material as the surface of the second material is oxidized,~~

~~wherein in (d), the hydroxyl group termination formed on the surface of the second material is removed by heating the substrate to sublimate an oxide formed on the surface of the second material.~~

~~9. The method of Claim 7 or 8, wherein in (d), the hydroxyl group termination formed on the surface of the second material is removed while retaining the hydroxyl group termination formed on the surface of the first material.~~

4~~10~~. The method of ~~any of~~ Claim~~s~~ 1~~5 to 9~~, further comprising:

(e) removing a native oxide film on the surfaces of the first material and the second material before performing (c).

5~~11~~. The method of any of Claims 1 to ~~10~~4, wherein in (b), by growing the film on the surface of the second material ~~of the concave portion~~, the film is grown bottom-up in an inside of the concave portion to bury the inside of the concave portion with the film.

6~~12~~. The method of any of Claims 1 to ~~11~~5, wherein (b) includes:

performing a cycle a predetermined number of times, the cycle including non-simultaneously performing:

(b1) supplying a raw material as the film-forming material to the substrate; and

(b2) supplying a reactant as the film-forming material to the substrate.

7~~13~~. The method of Claim 6~~12~~, wherein in at least one selected from the group of (b1) and

(b2), a catalyst is further supplied as the film-forming material to the substrate.

814. The method of any of Claims 1 to 713, wherein the second material further contains the first element.

915. The method of any of Claims 1 to 814, wherein the first element is silicon, and the second element is germanium.

1016. The method of any of Claims 1 to 915, wherein the first material is silicon, and the second material is silicon germanium.

1117. The method of any of Claims 1 to 1016, wherein in (b), a film containing silicon, oxygen, and carbon is grown as the film.

1218. A method of manufacturing a semiconductor device, comprising:

providing a substrate that includes a first material containing a first element and a second material containing a second element, the second material being different from the first material, wherein a concave portion is formed on a surface of the substrate, a bottom surface of the concave portion is composed of the second material, a side surface of the concave portion is composed of the first material, in contact with the bottom surface, and perpendicular to the bottom surface, and a top surface of the concave portion is composed of the first material, not in contact with the bottom surface, and parallel to the bottom surface;

(a) forming a film formation suppression layer on a surface of thea first material ~~of a concave portion of a substrate~~, by supplying a precursor to the substrate ~~provided with the concave portion on a surface of the substrate~~ to adsorb at least a portion of a molecular structure of molecules constituting the precursor on the surface of the first material ~~of the concave portion, the concave portion having a top surface and a side surface composed of the first material~~

~~containing a first element and a bottom surface composed of a second material containing a second element different from the first element~~; and

(b) growing a film on a surface of the second material ~~of the concave portion~~ by supplying a film-forming material to the substrate having the film formation suppression layer formed on the surface of the first material,

(c) forming, before performing (a), a hydroxyl group termination on the surface of the first material; and

(d) removing, after performing (c) and before performing (a), the hydroxyl group termination formed on the surface of the second material,

wherein in (c), the hydroxyl group termination is formed on the surface of the first material and on the surface of the second material by supplying a reaction material to the substrate to oxidize the surface of the first material and the surface of the second material, and

wherein in (d), the hydroxyl group termination formed on the surface of the second material is removed while retaining the hydroxyl group termination formed on the surface of the first material, by heating the substrate to sublimate an oxide formed on the surface of the second material.

13~~19~~. A substrate processing apparatus comprising:

~~a process chamber in which a substrate is processed;~~

a precursor supply system configured to supply a precursor to a substrate~~into the process chamber~~;

a film-forming material supply system configured to supply a film-forming material to the substrate~~into the process chamber~~; and

a controller configured to be capable of controlling the precursor supply system and the film-forming material supply system so as to perform a process ~~in the process chamber, the process~~ including:

providing the substrate that includes a first material containing a first element

and a second material containing a second element, the second material being different from the first material, wherein a concave portion is formed on a surface of the substrate, a bottom surface of the concave portion is composed of the second material, a side surface of the concave portion is composed of the first material, in contact with the bottom surface, and perpendicular to the bottom surface, and a top surface of the concave portion is composed of the first material, not in contact with the bottom surface, and parallel to the bottom surface;

(a) forming a film formation suppression layer on a surface of thea first material ~~of a concave portion of the substrate~~, by supplying the precursor to the substrate ~~provided with the concave portion on a surface of the substrate~~ to adsorb at least a portion of a molecular structure of molecules constituting the precursor on the surface of the first material ~~of the concave portion, the concave portion having a top surface and a side surface composed of the first material containing a first element and a bottom surface composed of a second material containing a second element different from the first element~~; and

(b) growing a film on a surface of the second material ~~of the concave portion~~ by supplying the film-forming material to the substrate having the film formation suppression layer formed on the surface of the first material,

(c) forming, before performing (a), a hydroxyl group termination on the surface of the first material; and

(d) removing, after performing (c) and before performing (a), the hydroxyl group termination formed on the surface of the second material,

wherein in (c), the hydroxyl group termination is formed on the surface of the first material and on the surface of the second material by supplying a reaction material to the substrate to oxidize the surface of the first material and the surface of the second material, and

wherein in (d), the hydroxyl group termination formed on the surface of the

second material is removed while retaining the hydroxyl group termination formed on the surface of the first material, by heating the substrate to sublimate an oxide formed on the surface of the second material.

1420. A program that causes, by a computer, a substrate processing apparatus to perform a process comprising:

providing a substrate that includes a first material containing a first element and a second material containing a second element, the second material being different from the first material, wherein a concave portion is formed on a surface of the substrate, a bottom surface of the concave portion is composed of the second material, a side surface of the concave portion is composed of the first material, in contact with the bottom surface, and perpendicular to the bottom surface, and a top surface of the concave portion is composed of the first material, not in contact with the bottom surface, and parallel to the bottom surface;

(a) forming a film formation suppression layer on a surface of thea first material ~~of a concave portion of a substrate~~, by supplying a precursor to the substrate ~~provided with the concave portion on a surface of the substrate~~ to adsorb at least a portion of a molecular structure of molecules constituting the precursor is adsorbed on the surface of the first material ~~of the concave portion, the concave portion having a top surface and a side surface composed of the first material containing a first element and a bottom surface composed of a second material containing a second element different from the first element~~; and

(b) growing a film on a surface of the second material ~~of the concave portion~~ by supplying a film-forming material to the substrate having the film formation suppression layer formed on the surface of the first material,

(c) forming, before performing (a), a hydroxyl group termination on the surface of the first material; and

(d) removing, after performing (c) and before performing (a), the hydroxyl group termination formed on the surface of the second material,

wherein in (c), the hydroxyl group termination is formed on the surface of the first material and on the surface of the second material by supplying a reaction material to the substrate to oxidize the surface of the first material and the surface of the second material, and

wherein in (d), the hydroxyl group termination formed on the surface of the second material is removed while retaining the hydroxyl group termination formed on the surface of the first material, by heating the substrate to sublimate an oxide formed on the surface of the second material.