WHAT IS CLAIMED IS:

1. A method of processing a substrate, comprising:

forming a first film containing a first element and a second element as a part of a charge trap film on an oxide film facing a control gate of a memory cell, the first film having first charge retention characteristics; and

forming a second film which is adjacent to the first film and contains the first element and the second element as another part of the charge trap film on the first film, the second film having second charge retention characteristics,

wherein the first charge retention characteristics are superior to the second charge retention characteristics,

wherein the first film is formed by performing a first cycle a predetermined number of times, the first cycle including performing:

(a1) supplying a first precursor gas containing the first element; and

(b1) supplying a first reaction gas containing the second element, and

wherein the second film is formed by performing a second cycle a predetermined number of times, the second cycle including performing:

(a2) supplying a second precursor gas containing the first element; and

(b2) supplying a second reaction gas containing the second element,

wherein the first element is silicon and the second element is nitrogen, and

wherein a thermal decomposition temperature of the second precursor gas is higher than a thermal decomposition temperature of the first precursor gas.

2. The method of Claim 1, wherein the first film has first step coverage characteristics, and the second film has second step coverage characteristics superior to the first step coverage characteristics.

3. The method of Claim 1, further comprising forming a third film on the second film,

wherein the third film has third charge retention characteristics superior to the second charge retention characteristics.

4. The method of Claim 2, further comprising forming a third film before forming the first film,

wherein the third film has third step coverage characteristics superior to the first step coverage characteristics.

5. The method of Claim 1, wherein a film thickness of the first film is smaller than a film thickness of the second film.

6. The method of Claim 1, wherein different halosilane-based gases are used as the first precursor gas and the second precursor gas respectively.

7. The method of Claim 1, wherein a gas including at least one selected from the group of a silicon hydride-based gas and an aminosilane-based gas is used as the first precursor gas.

8. The method of Claim 1, wherein a nitrogen-containing gas is used as the first reaction gas and the second reaction gas.

9. The method of Claim 1, wherein the first reaction gas and the second reaction gas are the same gas.

10. A method of processing a substrate, comprising:

forming a first film containing a first element and a second element as a part of a charge trap film on an oxide film facing a control gate of a memory cell, the first film having first charge retention characteristics; and

forming a second film which is adjacent to the first film and contains the first element and the second element as another part of the charge trap film on the first film, the second film having second charge retention characteristics, the second film having second charge retention characteristics,

wherein the first charge retention characteristics are superior to the second charge retention characteristics,

wherein the first film is formed by performing a first cycle a predetermined number of times, the first cycle including performing:

(a1) supplying a first precursor gas containing the first element; and

(b1) supplying a first reaction gas containing the second element, and

wherein the second film is formed by performing a second cycle a predetermined number of times, the second cycle including performing:

(a2) supplying a second precursor gas containing the first element;

(b2) supplying the first precursor gas; and

(c2) supplying a second reaction gas containing the second element,

wherein the first element is silicon and the second element is nitrogen, and

wherein a thermal decomposition temperature of the second precursor gas is higher than a thermal decomposition temperature of the first precursor gas.

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

forming a first film containing a first element and a second element as a part of a charge trap film on an oxide film facing a control gate of a memory cell, the first film having first

charge retention characteristics; and

forming a second film which is adjacent to the first film and contains the first element and the second element as another part of the charge trap film on the first film, the second film having second charge retention characteristics,

wherein the first charge retention characteristics are superior to the second charge retention characteristics,

wherein the first film is formed by performing a first cycle a predetermined number of times, the first cycle including performing:

(a1) supplying a first precursor gas containing the first element; and

(b1) supplying a first reaction gas containing the second element, and

wherein the second film is formed by performing a second cycle a predetermined number of times, the second cycle including performing:

(a2) supplying a second precursor gas containing the first element; and

(b2) supplying a second reaction gas containing the second element,

wherein the first element is silicon and the second element is nitrogen, and

wherein a thermal decomposition temperature of the second precursor gas is higher than a thermal decomposition temperature of the first precursor gas.

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

forming a first film containing a first element and a second element as a part of a charge trap film on an oxide film facing a control gate of a memory cell, the first film having first charge retention characteristics; and

forming a second film which is adjacent to the first film and contains the first element and the second element as another part of the charge trap film on the first film, the second film having second charge retention characteristics,

wherein the first film is formed by performing a first cycle a predetermined number of times, the first cycle including performing:

(a1) supplying a first precursor gas containing the first element; and

(b1) supplying a first reaction gas containing the second element, and

wherein the second film is formed by performing a second cycle a predetermined number of times, the second cycle including performing:

(a2) supplying a second precursor gas containing the first element;

(b2) supplying the first precursor gas; and

(c2) supplying a second reaction gas containing the second element,

wherein the first element is silicon and the second element is nitrogen, and

wherein a thermal decomposition temperature of the second precursor gas is higher than a thermal decomposition temperature of the first precursor gas.

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

forming a first film containing a first element and a second element as a part of a charge trap film on an oxide film facing a control gate of a memory cell, the first film having first charge retention characteristics; and

forming a second film which is adjacent to the first film and contains the first element and the second element as another part of the charge trap film on the first film, the second film having second charge retention characteristics,

wherein the first charge retention characteristics are superior to the second charge retention characteristics,

wherein the first film is formed by performing a first cycle a predetermined number of times, the first cycle including performing:

(a1) supplying a first precursor gas containing the first element; and

(b1) supplying a first reaction gas containing the second element, and

wherein the second film is formed by performing a second cycle a predetermined number of times, the second cycle including performing:

(a2) supplying a second precursor gas containing the first element; and

(b2) supplying a second reaction gas containing the second element,

wherein the first element is silicon and the second element is nitrogen, and

wherein a thermal decomposition temperature of the second precursor gas is higher than a thermal decomposition temperature of the first precursor gas.

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

forming a first film containing a first element and a second element as a part of a charge trap film on an oxide film facing a control gate of a memory cell, the first film having first charge retention characteristics; and

forming a second film which is adjacent to the first film and contains the first element and the second element as another part of the charge trap film on the first film, the second film having second charge retention characteristics,

wherein the first film is formed by performing a first cycle a predetermined number of times, the first cycle including performing:

(a1) supplying a first precursor gas containing the first element; and

(b1) supplying a first reaction gas containing the second element, and

wherein the second film is formed by performing a second cycle a predetermined number of times, the second cycle including performing:

(a2) supplying a second precursor gas containing the first element;

(b2) supplying the first precursor gas; and

(c2) supplying a second reaction gas containing the second element,

wherein the first element is silicon and the second element is nitrogen, and

wherein a thermal decomposition temperature of the second precursor gas is higher than a thermal decomposition temperature of the first precursor gas.

15. A substrate processing apparatus comprising:

a first precursor gas supply system configured to supply a first precursor gas containing a first element to a substrate;

a second precursor gas supply system configured to supply a second precursor gas containing the first element to the substrate;

a reaction gas supply system configured to supply a reaction gas containing a second element different from the first element to the substrate; and

a controller configured to be capable of controlling the first precursor gas supply system, the second precursor gas supply system, and the reaction gas supply system to perform a process in the process chamber, the process including:

forming a first film containing the first element and the second element as a part of a charge trap film on an oxide film facing a control gate of a memory cell, the first film having first charge retention characteristics; and

forming a second film which is adjacent to the first film and contains the first element and the second element as another part of the charge trap film on the first film, the second film having second charge retention characteristics,

wherein the first charge retention characteristics are superior to the second charge retention characteristics,

wherein the first film is formed by performing a first cycle a predetermined number of times, the first cycle including performing:

(a1) supplying the first precursor gas; and

(b1) supplying the reaction gas, and

wherein the second film is formed by performing a second cycle a predetermined number of times, the second cycle including performing:

(a2) supplying the second precursor gas; and

(b2) supplying the reaction gas,

wherein the first element is silicon and the second element is nitrogen, and

wherein a thermal decomposition temperature of the second precursor gas is higher than a thermal decomposition temperature of the first precursor gas.

16. A substrate processing apparatus comprising:

a first precursor gas supply system configured to supply a first precursor gas containing a first element to a substrate;

a second precursor gas supply system configured to supply a second precursor gas containing the first element to the substrate;

a reaction gas supply system configured to supply a reaction gas containing a second element different from the first element to the substrate; and

a controller configured to be capable of controlling the first precursor gas supply system, the second precursor gas supply system, and the reaction gas supply system to perform a process in the process chamber, the process including:

forming a first film containing the first element and the second element as a part of a charge trap film on an oxide film facing a control gate of a memory cell, the first film having first charge retention characteristics; and

forming a second film which is adjacent to the first film and contains the first element and the second element as another part of the charge trap film on the first film, the second film having second charge retention characteristics,

wherein the first charge retention characteristics are superior to the second charge retention characteristics,

wherein the first film is formed by performing a first cycle a predetermined number of

times, the first cycle including performing:

(a1) supplying the first precursor gas; and

(b1) supplying the reaction gas, and

wherein the second film is formed by performing a second cycle a predetermined number of times, the second cycle including performing:

(a2) supplying the second precursor gas;

(b2) supplying the first precursor gas; and

(c2) supplying the reaction gas,

wherein the first element is silicon and the second element is nitrogen, and

wherein a thermal decomposition temperature of the second precursor gas is higher than a thermal decomposition temperature of the first precursor gas.