Claims

1. A method for seasoning a process chamber, comprising:

depositing a first seasoning film onto a component of the process chamber at a chamber pressure of 4 mTorr to 20 mTorr and a temperature below about 200° C. or 200° C. to 400° C.;

depositing a second seasoning film onto the first seasoning film; and

depositing a deposition film onto the second seasoning film,

wherein depositing the first seasoning film comprises flowing a first carbon-containing precursor gas and a first inert precursor gas into the process chamber,

wherein the first seasoning film comprises a first intrinsic stress having a first value and the second seasoning film comprises a second intrinsic stress having a second value that is less than the first value.

2. The method of claim 1, wherein:

depositing the first seasoning film onto the component comprises flowing the first carbon-containing precursor gas and the first inert precursor gas at a first flow ratio of the first carbon-containing precursor gas and the first inert precursor gas, and

depositing the second seasoning film onto the first seasoning film comprises adjusting the first flow ratio of the first carbon-containing precursor gas and the first inert precursor gas to a second flow ratio.

3. The method of claim 1, wherein:

depositing the first seasoning film onto the component comprises providing a first RF power to the chamber, and

depositing the second seasoning film onto the first seasoning film comprises adjusting the first RF power to a second RF power.

4. A method for seasoning a process chamber, comprising:

depositing a first seasoning film onto a component of the process chamber at a chamber pressure of 4 mTorr to 20 mTorr and a temperature below about 200° C. or 200° C. to 400° C.;

depositing a plurality of additional seasoning films onto the first seasoning film, wherein each seasoning film of the plurality of additional seasoning films comprises an alternating intrinsic stress such that each additional seasoning film alternates between a higher intrinsic stress and a lower intrinsic stress; and

depositing a deposition film onto the plurality of additional seasoning films, wherein:

depositing the first seasoning film comprises flowing a first carbon-containing precursor gas and a first inert precursor gas into the process chamber.

5. The method of claim 4, wherein depositing the plurality of additional seasoning films comprises:

depositing a second seasoning film onto the first seasoning film by flowing a second carbon-containing precursor gas and a second inert precursor gas into the process chamber,

depositing a third seasoning film onto the second seasoning film by flowing a third carbon-containing precursor gas and a third inert precursor gas into the process chamber,

depositing a fourth seasoning film onto the third seasoning film by flowing a fourth carbon-containing precursor gas and a fourth inert precursor gas into the process chamber,

wherein:

the second, third, and fourth carbon-containing precursor gases are independently the same as or different than each other, and

the second, third, and fourth inert precursor gases are independently the same as or different than each other.

6. The method of claim 5, wherein:

depositing the first seasoning film onto the component comprises flowing the first carbon-containing precursor gas and the first inert precursor gas at a first flow ratio of the first carbon-containing precursor gas and the first inert precursor gas;

depositing the second seasoning film onto the first seasoning film comprises adjusting the first flow ratio of the first carbon-containing precursor gas and the first inert precursor gas to a second flow ratio;

depositing the third seasoning film onto the second seasoning film comprises adjusting the second flow ratio of the second carbon-containing precursor gas and the second inert precursor gas to a third flow ratio; and

depositing the fourth seasoning film onto the third seasoning film comprises adjusting the third flow ratio of the third carbon-containing precursor gas and the third inert precursor gas to a fourth flow ratio.

7. The method of claim 6, wherein the first flow ratio and the third flow ratio are independently 1:1 to 1:2.

8. The method of claim 5, wherein:

depositing the first seasoning film onto the component comprises providing a first RF power to the chamber;

depositing the second seasoning film onto the first seasoning film comprises adjusting the first RF power to a second RF power;

depositing the third seasoning film onto the second seasoning film comprises adjusting the second RF power to a third RF power; and

depositing the fourth seasoning film onto the third seasoning film comprises adjusting the third RF power to a fourth RF power.

9. The method of claim 5, wherein

the first seasoning film comprises a first intrinsic stress value;

the second seasoning film comprises a second intrinsic stress value that is different than the first intrinsic stress value;

the third seasoning film comprises a third intrinsic stress value that is the same as the first intrinsic stress value;

the fourth seasoning film comprises a fourth intrinsic stress that is the same as the second intrinsic stress value.