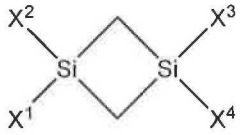
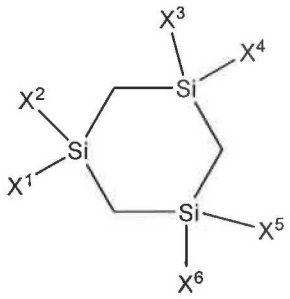
16. A method for depositing a carbon doped silicon oxide film, the method comprising:

placing a substrate into a reactor;

introducing at least one cyclic carbosilane precursor having the following Formulae I and II:



I



II

wherein X^1, X^2, X^3, X^4, X^5, and X^6 are each independently chosen from a hydrogen atom; a halide atom selected from F, Cl, Br, and I; an amino group having the formula NR^1R^2 wherein R^1 and R^2 are independently selected from the group consisting of a hydrogen atom, a C_1 to C_{10} linear alkyl group; a C_3 to C_{10} branched alkyl group; a C_3 to C_{10} cyclic alkyl group; a C_3 to C_{10} alkenyl group; a C_4 to C_{10} aryl group; and a C_4 to C_{10} heterocyclic group;

introducing a nitrogen source under conditions sufficient to react with the at least one cyclic carbosilane precursor and form a carbon doped silicon nitride film; and,

exposing the carbon doped silicon nitride film to an oxygen source under conditions sufficient to convert the carbon doped silicon nitride film to the carbon doped silicon oxide film.

17. The process of Claim 16 wherein the precursor comprises Formulae I and X^1, X^2, X^3 and X^4 are Cl.

18. The process of Claim 16 wherein the exposing comprises thermal annealing the carbon doped silicon nitride film in the presence of the oxygen source.

19. The process of Claim 18 wherein the oxygen source comprises at least one of air and water.

20. The process of Claim 16 further comprising treating the silicon doped silicon oxide film with a hydrogen containing plasma.