CLAIM(S):

What is claimed is:

1. A method of chemical mechanical polishing a substrate including a silicon oxygen containing material, the method comprising:

(a) contacting the substrate with the chemical mechanical polishing composition comprising:

a water based liquid carrier;

colloidal silica abrasive particles dispersed in the liquid carrier;

a chemical species incorporated in the colloidal silica abrasive particles internal to an outer surface thereof, wherein the chemical species is a nitrogen containing compound or a phosphorus containing compound;

a pH in a range from about 3.5 to about 6;

wherein the colloidal silica abrasive particles have a permanent positive charge of at least 15 mV; and

wherein the chemical species is not an aminosilane or a phosphonium silane;

(b) moving the polishing composition relative to the substrate; and

(c) abrading the substrate to remove a portion of the silicon oxygen containing material from the substrate and thereby polish the substrate.

2. The method of claim 1, wherein:

the polishing composition comprises less than 4 percent by weight of the colloidal silica abrasive particles; and

an average removal rate of the silicon oxygen material in (c) is greater than 3000 Å/min at a downforce of 5 psi or less.

3. The method of claim 1, wherein:

the polishing composition comprises less than 2 percent by weight of the colloidal silica abrasive particles; and

an average removal rate of the silicon oxygen material in (c) is greater than 3000 Å/min at a downforce of 5 psi or less.

4. The method of claim 1, wherein:

the polishing composition comprises less than 3 percent by weight of the colloidal silica abrasive particles; and

an average removal rate of the silicon oxygen material in (c) is greater than 2000 Å/min at a downforce of 4 psi or less.

5. The method of claim 1, wherein:

the polishing composition comprises less than 2.0 percent by weight of the colloidal silica abrasive particles; and

an average removal rate of the silicon oxygen material in (c) is greater than 2000 Å/min at a downforce of 4 psi or less.

6. The method of claim 1, wherein:

the polishing composition comprises less than 2.5 percent by weight of the colloidal silica abrasive particles; and

a removal rate of the silicon oxygen material in (c) is greater than 2000 Å/min at a down force of 4 psi or less and a removal rate of a silicon nitride material is less than 300 Å/min at a downforce of 3 psi or less.

7. The method of claim 1, wherein the polishing composition further comprises a silicon nitrogen polishing accelerator and a TEOS:SiN polishing rate selectivity is less than about 10:1.

8. The method of claim 1, wherein the polishing composition further comprises a silicon nitrogen polishing inhibitor and a TEOS:SiN polishing rate selectivity is greater than about 25:1.