WHAT IS CLAIMED IS:

1. A chemical-mechanical polishing (CMP) composition comprising:

(a) an amino compound;

(b) a radical-forming oxidizing agent;

(c) a radical trapping agent capable of inhibiting radical-induced oxidation of the amino compound, the radical trapping agent comprising a hydroxyl-substituted polyunsaturated cyclic compound, a nitrogenous compound, or a combination thereof; and

(d) an aqueous carrier therefor.

2. The CMP composition of claim 1 wherein the radical trapping agent comprises a nitrogenous compound selected from the group consisting of an aromatic nitro compound, a heteroaromatic nitro compound, an aliphatic nitro compound, a nitroso compound, a nitrogen free radical-type compound, an N-oxide compound, an N-hydroxyl-imine compound, an acylamino-substituted aromatic compound, an N-acyl-enamine compound, and a combination of two or more of the foregoing nitrogenous compounds.

3. The CMP composition of claim 1 wherein the radical trapping agent comprises a hydroxyl-substituted polyunsaturated cyclic compound selected from the group consisting of a hydroquinone-type compound, a hydroxyl-substituted quinone compound, a hydroxyl-substituted coumarin compound, a hydroxyl-substituted naphthalene compound, an alkyloxy-substituted phenol compound, an alkyl-substituted phenol compound, a hydroxyl-substituted heteroaromatic compound, a sulfonic acid substituted phenolic compound, a salt thereof, and a combination of two or more of the foregoing compounds.

4. The CMP composition of claim 1 wherein the radical-forming oxidizing agent comprises at least one oxidizing agent selected from the group consisting of a peroxy compound and a halogen compound.

5. The CMP composition of claim 1 wherein the radical-forming oxidizing agent comprises hydrogen peroxide.

6. The CMP composition of claim 1 wherein the radical-forming oxidizing agent comprises a persulfate compound.

7. The CMP composition of claim 1 wherein the radical-forming oxidizing agent comprises iodine.

8. The CMP composition of claim 1 wherein the amino compound comprises at least one primary amine group, at least nitrogen-containing heterocyclic group, at least one quaternary ammonium group, or a combination of two or more of the foregoing.

9. The CMP composition of claim 1 wherein the composition further comprises a metal oxide abrasive.

10. The CMP composition of claim 9 wherein the metal oxide abrasive is selected from the group consisting of silica, alumina, titania, ceria, zirconia, and a combination of two or more of the foregoing abrasives.

What is claimed is:

1. A chemical-mechanical polishing (CMP) composition comprising:

(a) an amino compound;

(b) a radical-forming oxidizing agent;

(c) a radical trapping agent capable of inhibiting radical-induced oxidation of the amino compound, the radical trapping agent wherein the radical trapping agent comprises a nitrogenous compound selected from the group consisting of an aromatic nitro compound, a heteroaromatic nitro compound, an aliphatic nitro compound, a nitroso compound, a nitrogen free radical-type compound, an N-oxide compound, an N-hydroxyl-imine compound, an acylamino-substituted aromatic compound, an N-acyl-enamine compound, and a combination of two or more of the foregoing nitrogenous compounds; and

(d) an aqueous carrier therefor.

2. The CMP composition of claim 1 wherein the radical trapping agent comprises a hydroxyl-substituted polyunsaturated cyclic compound selected from the group consisting of a hydroquinone-type compound, a hydroxyl-substituted quinone compound, a hydroxyl-substituted coumarin compound, a hydroxyl-substituted naphthalene compound, an alkyloxy-substituted phenol compound, an alkyl-substituted phenol compound, a hydroxyl-substituted heteroaromatic compound, a sulfonic acid substituted phenolic compound, a salt thereof, and a combination of two or more of the foregoing compounds.

3. The CMP composition of claim 1 wherein the radical-forming oxidizing agent comprises at least one oxidizing agent selected from the group consisting of a peroxy compound and a halogen compound.

4. The CMP composition of claim 1 wherein the radical-forming oxidizing agent comprises hydrogen peroxide.

5. The CMP composition of claim 1 wherein the radical-forming oxidizing agent comprises a persulfate compound.

6. The CMP composition of claim 1 wherein the radical-forming oxidizing agent comprises iodine.

7. The CMP composition of claim 1 wherein the amino compound comprises at least one primary amine group, at least nitrogen-containing heterocyclic group, at least one quaternary ammonium group, or a combination of two or more of the foregoing.

8. The CMP composition of claim 1 wherein the composition further comprises a metal oxide abrasive.

9. The CMP composition of claim 8 wherein the metal oxide abrasive is selected from the group consisting of silica, alumina, titania, ceria, zirconia, and a combination of two or more of the foregoing abrasives.