Claims:

1. A perpendicular data recording medium, comprising:

a multi-layer recording structure formed on a base substrate and adapted to magnetically store a magnetic bit sequence in domains substantially perpendicular to said layers; and

a thin magnetic stabilization layer formed on the multi-layer recording substrate to magnetically stabilize an upper portion of the recording structure, the magnetic stabilization layer comprising a platinum (Pt) content of about 20-25%.

2. The medium of claim 1, in which the magnetic stabilization layer comprises a thin layer of continuous, hard magnetic material with a thickness of from about 40 to 60 angstroms.

3. The medium of claim 1, in which the magnetic stabilization layer further comprises a non-zero boron (B) content of less than about 6%.

~~4. The medium of claim 3, in which the magnetization stabilization layer further comprises a platinum (Pt) content of about 20-25%.~~

~~5~~4. The medium of claim 1, in which the magnetic stabilization layer provides a magnetic saturation level of greater than about ~~600~~ 600 eμ/cm^2 and anisotropic field strengths (Hk) of greater than about 15,000 Oersteds (Oe).

~~6~~5. The medium of claim 1, in which the recording structure is an ECC+CGC recording structure.

~~7~~6. The medium of claim 1, in which the recording structure comprises a soft underlayer, at least one intermediate layer, and at least one magnetic recording layer, wherein the magnetic stabilization layer is formed on a topmost one of the at least one magnetic recording layer.

~~8~~7. The medium of claim ~~7~~6, in which the magnetic stabilization layer has a thickness that is less than 1% of the thickness of the topmost one of the at least one magnetic recording layer.

~~9~~8. The medium of claim 1, further comprising a carbon overcoat layer formed on the magnetic stabilization layer.

~~10~~9. A perpendicular data recording medium, comprising:

a multi-layer recording structure adapted to magnetically store a magnetic bit sequence in domains substantially perpendicular to said layers; and

a thin hard magnetic layer on the multi-layer recording substrate to magnetically stabilize an upper portion of the recording structure, the thin hard magnetic layer having a thickness of less than 1% of a topmost recording layer of the recording structure.

~~11. The medium of claim 10, in which the thin hard magnetic layer has a thickness of less than 1% of a topmost recording layer of the recording structure.~~

~~12~~10. The medium of claim ~~10~~9, in which the thin hard magnetic layer comprises a non-zero boron (B) content of less than about 6%.

~~13~~11. The medium of claim ~~12~~10, in which the thin hard magnetic layer further comprises a platinum (Pt) content of about 20-25%.

~~14~~12. The medium of claim ~~10~~9, in which the thin hard magnetic layer provides a magnetic saturation level of greater than about ~~600~~ 600 eμ/cm^2 and anisotropic field strengths (Hk) of greater than about 15,000 Oersteds (Oe) for the medium.

~~15~~13. The medium of claim ~~10~~9, in which the recording structure is an ECC+CGC recording structure.

~~16~~14. The medium of claim ~~10~~9, in which the recording structure comprises a soft underlayer, at least one intermediate layer, and at least one magnetic recording layer, wherein the thin hard magnetic layer is formed on a topmost one of the at least one magnetic recording layer.

~~17~~15. The medium of claim ~~10~~9, further comprising a carbon overcoat layer formed on the thin hard magnetic layer.

~~18~~16. A perpendicular data recording medium, comprising:

a multi-layer recording structure adapted to magnetically store a magnetic bit sequence in domains substantially perpendicular to said layers; and

means for magnetically stabilizing an upper portion of the recording structure comprising a thin hard magnetic layer on the multi-layer recording substrate having a non-zero boron (B) content of less than about 6% and a platinum (Pt) content of about 20-25%, and in which the thin hard magnetic layer provides a magnetic saturation level of greater than about 600 eμ/cm^2 and anisotropic field strengths (Hk) of greater than about 15,000 Oersteds (Oe) for the medium.

~~19~~17. The medium of claim ~~18~~16, in which the ~~means for magnetically stabilizing an upper portion of the recording structure comprises a~~ thin hard magnetic layer on the multi-layer recording substrate has ~~having~~ a thickness of less than 1% of a topmost recording layer of the recording structure.

~~20. The medium of claim 19, in which the thin hard magnetic layer comprises a non-zero boron (B) content of less than about 6% and a platinum (Pt) content of about 20-25%, and in which the thin hard magnetic layer provides a magnetic saturation level of greater than about 600 600 eμ/cm^2 and anisotropic field strengths (Hk) of greater than about 15,000 Oersteds (Oe) for the medium.~~