Claims:

1. A thin film microelectronic device, comprising:

a substrate having a tungsten gate electrode stack comprising a tungsten silicide nitride film having a formula WxSiyNz, wherein x is about 19 to about 22 atomic percent, y is about 57 to about 61 atomic percent, and z is about 15 to about 20 atomic percent.

2. The thin film microelectronic device of claim 1, wherein the tungsten gate electrode stack further comprises a gate oxide layer atop the substrate and the tungsten silicide nitride film disposed atop the gate oxide layer.

3. The thin film microelectronic device of claim 2, wherein the tungsten gate electrode stack further comprises a bulk tungsten layer atop the tungsten silicide nitride film.

4. The thin film microelectronic device of claim 3, wherein a thickness of the bulk tungsten layer is about 2000 to about 5000 angstroms.

5. The thin film microelectronic device of claim 1, wherein a thickness of the tungsten silicide nitride film is about 20 to about 50 angstroms.

6. The thin film microelectronic device of claim 1, wherein the tungsten gate electrode stack has a resistivity of about 7.17 to about 7.27 μΩ-cm.

7. A method of processing a substrate disposed in physical vapor deposition (PVD) chamber, comprising:

exposing a substrate having a gate insulating layer to a plasma formed from a first process gas comprising nitrogen and argon;

sputtering silicon and tungsten material from a target disposed within a processing volume of the PVD chamber;

depositing atop the gate insulating layer a tungsten silicide nitride layer having a formula WxSiyNz, wherein x is about 19 to about 22 atomic percent, y is about 57 to about 61 atomic percent, and z is about 15 to about 20 atomic percent; and

depositing a bulk tungsten layer atop the tungsten silicide nitride layer.

8. The method of claim 7, wherein a thickness of the tungsten silicide nitride layer is about 20 to about 50 angstroms.

9. The method of claim 7, wherein a thickness of the bulk tungsten layer is about 2000 to about 5000 Angstroms.

10. The method of claim 7, wherein the target has a composition of about 33 wt % tungsten and about 66 wt. % silicon**.**

11. The method of claim 7, wherein the first process gas comprises about 3 sccm to about 5 sccm of nitrogen.

12. The method of claim 7, wherein the first process gas comprises about 40 sccm to about 45 sccm of argon.

13. The method of claim 7, wherein forming the plasma from the first process gas comprises applying about 500 to about 800 watts of DC power to the target.

14. The method of claim 7, further comprising:

forming a patterned resist layer atop the bulk tungsten layer; and

etching the bulk tungsten layer, tungsten silicide nitride adhesion and gate insulating layer to form a tungsten gate electrode stack.

15. The method of claim 14, wherein the tungsten gate electrode stack has a resistivity of about 7.17 to about 7.27 μΩ-cm.

16. A computer readable medium, having instructions stored thereon which, when executed, cause a physical vapor deposition process chamber to perform a method of processing a substrate disposed atop a substrate support within the physical vapor deposition process chamber, the method comprising:

exposing a substrate having a gate insulating layer to a plasma formed from a first process gas comprising nitrogen and argon;

sputtering silicon and tungsten material from a target disposed within a processing volume of the PVD chamber;

depositing a tungsten silicide nitride layer atop the gate insulating layer having a formula $W_xSi_yN_z$, wherein x is about 19 to about 22 atomic percent, y is about 57 to about 61 atomic percent, and z is about 15 to about 20 atomic percent; and

depositing a bulk tungsten layer atop the tungsten silicide nitride layer.

17. The computer readable medium of claim 16, wherein depositing the tungsten silicide nitride layer comprises depositing the tungsten silicide nitride layer to a thickness of about 20 to about 50 angstroms.

18. The computer readable medium of claim 16, wherein depositing the bulk tungsten layer comprises depositing the bulk tungsten layer to a thickness of about 5000 angstroms.

19. The computer readable medium of claim 16, further comprising:

forming a patterned resist layer atop the bulk tungsten layer; and

etching the bulk tungsten layer, tungsten silicide nitride adhesion and gate insulating layer to form a tungsten gate electrode stack.

20. The computer readable medium of claim 19, wherein the tungsten gate electrode stack has a resistivity of about 7.17 to about 7.27 μΩ-cm.