CLAIMS

I/we claim,

1. A memory cell, comprising:

a conductive gate comprising ruthenium;

a charge-blocking region adjacent the conductive gate;

a charge-storage region adjacent the charge-blocking region;

a tunneling material adjacent the charge-storage region;

a channel material adjacent the tunneling material; and

wherein the conductive gate comprises:

a conductive core material comprising one or more metals other than the ruthenium;

a second conductive material adjacent the conductive core material and comprising at least one metal nitride; and;

a third conductive material adjacent the second conductive material and comprising the ruthenium.

2. The memory cell of claim 1 comprising a dielectric barrier material directly against the ruthenium of the conductive gate, and between the charge-blocking region and the conductive gate.

3. The memory cell of claim 1 wherein the channel material comprises one or more of silicon, germanium, III/V semiconductor material, and semiconductor oxide.

4. The memory cell of claim 1 wherein the channel material comprises silicon.

5. The memory cell of claim 1 wherein the conductive gate consists of the ruthenium.

6. The memory cell of claim 1 wherein the conductive gate comprises:

the conductive core material comprising one or more metals other than the ruthenium; and

the second conductive material adjacent a periphery of the conductive core material and comprising the ruthenium.

7. The memory cell of claim 6 wherein the conductive core material consists of said one or more metals other than the ruthenium.

8. The memory cell of claim 6 wherein the conductive core material includes one or both of tungsten and molybdenum.

9. The memory cell of claim 1 wherein a dielectric barrier material is adjacent the third conductive material.

10. The memory cell of claim 1 wherein the conductive gate comprises:

the conductive core material comprising the one or more metals other than the ruthenium;

the second conductive material adjacent the conductive core material and comprising one both of titanium and tungsten; and

the third conductive material adjacent the second conductive material and comprising the ruthenium.

11. The memory cell of claim 10 wherein:

the conductive core material consists of tungsten;

the second conductive material comprises one or both of titanium nitride and tungsten nitride; and

the third conductive material consists of the ruthenium.

12. An assembly, comprising:

a vertical stack of alternating insulative levels and wordline levels, the wordline levels comprising conductive wordline material which includes ruthenium;

semiconductor material extending through the stack as a channel structure;

charge-storage regions between the conductive wordline material and the channel structure;

charge-blocking regions between the charge-storage regions and the conductive wordline material; and

wherein the conductive wordline material comprises:

a conductive core material comprising one or more metals other than the ruthenium;

a second conductive material adjacent the conductive core material and comprising at least one metal nitride; and

a third conductive material adjacent the second conductive material and comprising the ruthenium.

13. The assembly of claim 12 wherein the conductive wordline material consists of the ruthenium.

14. The assembly of claim 12 wherein the semiconductor material comprises silicon.

15. The assembly of claim 12 wherein the conductive wordline material comprises:

the conductive core material which does not include the ruthenium; and

the second conductive material adjacent a periphery of the conductive core material and comprising the ruthenium.

16. The assembly of claim 15 wherein the conductive core material includes one or more metals.

17. The assembly of claim 15 wherein the conductive core material consists of tungsten.

18. The assembly of claim 15 wherein the conductive core material consists of molybdenum and tungsten.

19. The assembly of claim 12 wherein a dielectric barrier material is adjacent the third conductive material.

20. The assembly of claim 12 wherein:

the conductive core material consists of one or both of tungsten and molybdenum;

the second conductive material comprises one or both of titanium nitride and tungsten nitride; and

the third conductive material consists of the ruthenium.

21. A method of forming an integrated assembly, comprising:

forming a stack comprising alternating first and second materials; the second material being an insulative material;

forming channel-material-pillars to extend through the stack;

removing the first material to leave voids;

forming conductive gate material within the voids; the conductive gate material comprising ruthenium; and

recessing the conductive gate material comprising the ruthenium within the voids.

22. The method of claim 21 wherein the channel-material-pillars are hollow configurations.

23. The method of claim 21 further comprising:

forming tunneling material adjacent the channel material of the channel-material-pillars;

forming charge-storage material adjacent the tunneling material;

forming charge-blocking material adjacent the charge-storage material; and

forming the conductive gate material to be on an opposing side of the charge-blocking material relative to the charge-storage material.

24. The method of claim 23 wherein the charge-storage material comprises silicon nitride.

25. The method of claim 23 further comprising:

forming dielectric blocking material to line the voids; and

forming the conductive gate material within the lined voids.

26. The method of claim 25 the conductive gate material consists of the ruthenium.

27. The method of claim 21 wherein the forming of the conductive gate material comprises:

forming a liner material within the voids to line the voids, the liner material comprising the ruthenium; and

forming a conductive core material within the lined voids, the conductive core material comprising one or more metals other than the ruthenium.

28. The method of claim 27 wherein the conductive core material consists of one or both of tungsten and molybdenum.

29. The method of claim 27 wherein the conductive core material is recessed within the voids with a first etch, and subsequently the liner is recessed within the voids with a second etch different from the first etch.

30. The method of claim 29 wherein the second etch utilizes an oxidative plasma.

31. The method of claim 21 wherein the forming of the conductive gate material comprises:

forming a first conductive material within the voids, the first conductive material having a first outer surface, the first conductive material comprising the ruthenium;

forming a second conductive material adjacent the outer surface of the first conductive material and within the voids, the second conductive material having a second outer surface, the second conductive material comprising one both of titanium and tungsten; and

forming a conductive core material adjacent the second outer surface and within the voids, the conductive core material comprising one or more metals other than the ruthenium.

32. The method of claim 31 wherein:

the conductive core material consists of one or both of tungsten and molybdenum;

the second conductive material comprises one or both of titanium nitride and tungsten nitride; and

the first conductive material consists of the ruthenium.

33. The method of claim 31 wherein the conductive core material and the second conductive material are recessed within the voids with a first etch, and subsequently the first conductive material is recessed within the voids with a second etch different from the first etch.

34. The method of claim 33 wherein the second etch utilizes an oxidative plasma.