depositing a metal coordination complex on at least a part of the activated portion of the surface after applying the magnetic field;

removing the magnetic field after depositing the metal coordination complex;

exposing the metal coordination complex to electromagnetic radiation;

reducing the metal coordination complex to elemental metal;

removing unreduced metal coordination complex from the surface;

drying the surface; and

depositing a conductive material onto the surface.

[015] In an aspect of this invention, activating the substrate surface comprises etching the surface.

[016] In an aspect of this invention, etching the surface comprises chemical etching.

[017] In an aspect of this invention, chemical etching comprises acid etching, base etching or oxidative etching.

[018] In an aspect of this invention, etching the surface comprises mechanical etching.

[019] In an aspect of this invention, etching the surface comprises plasma etching.

[020] In an aspect of this invention, etching the surface comprises laser-etching.

[021] In an aspect of this invention, plasma or laser etching comprises etching in a pre-determined pattern.

[022] In an aspect of this invention, the magnetic field has a magnetic flux density of at least 1000 gauss.

[023] In an aspect of this invention, the magnetic field is orthogonal to the surface.

What is claimed:

1. A method of forming a conductive layer on a surface, comprising:

activating at least a portion of a non-conductive substrate surface;

applying a magnetic field to the surface;

depositing a metal coordination complex on at least a part of the activated portion of the surface after applying the magnetic field;

removing the magnetic field after depositing the metal coordination complex;

exposing the metal coordination complex to electromagnetic radiation;

reducing the metal coordination complex to elemental metal;

removing unreduced metal coordination complex from the surface;

drying the surface; and

depositing a conductive material onto the surface.

2. The method of claim 1, wherein activating the substrate surface comprises etching the surface.

3. The method of claim 2, wherein etching the surface comprises chemical etching.

4. The method of claim 3, wherein chemical etching comprises acid etching, base etching or oxidative etching.

5. The method of claim 2, wherein etching the surface comprises mechanical etching.

6. The method of claim 2, wherein etching the surface comprises plasma etching.

7. The method of claim 2, wherein etching the surface comprises laser-etching.

8. The method of claim 6, wherein plasma or laser etching comprises etching in a pre-determined pattern.

9. The method of claim 1, where the magnetic field has a magnetic flux density of at least 1000 gauss.

10. The method of claim 9, wherein the magnetic field is orthogonal to the surface.

11. The method of claim 1, where depositing a metal coordination complex on at least a portion of the surface comprises using a mask.

12. The method of claim 10, wherein the mask comprises an electronic circuit.

13. The method of claim 12, wherein the electronic circuit is selected from the group consisting of an analog circuit, a digital circuit, a mixed-signal circuit and an RF circuit.

~~14. An analog circuit fabricated using the method of claim 1.~~

~~15. A digital circuit fabricated using the method of claim 1~~

~~16. A mixed-signal circuit fabricated using the method of claim 1.~~

~~17. An RF circuit fabricated using the method of claim 1.~~

~~18~~14. The method of claim 1, wherein exposing the metal coordination complex to electromagnetic radiation comprises microwave radiation, infrared radiation, visible light radiation, ultraviolet radiation, X-ray radiation or gamma radiation.

~~19~~15. The method of claim 1, where reducing the metal coordination complex to a zero oxidation state metal comprises using a combination of metals and/or catalysts.

~~20~~16. The method of claim 1, wherein removing unreduced metal coordination complex from the surface comprises washing the surface with a solvent.

~~21~~17. The method of claim 1, wherein drying the surface comprises drying at ambient temperature or drying at elevated temperature.

~~22~~18. The method of claim ~~21~~17, wherein drying the surface at ambient or elevated temperature comprises using a vacuum chamber.

~~23~~19. The method of claim 1, wherein depositing a conductive material onto the surface comprises electrolytic deposition of a metal onto the portion of the surface comprising the reduced metal coordination complex.

~~24~~20. The method of claim ~~23~~19, wherein electrolytic deposition of a metal onto the portion of the surface comprising the reduced metal coordination complex:

contacting a negative terminal of a direct current power supply with at least the portion of the surface comprising the reduced metal coordination complex;

providing an aqueous solution comprising a salt of the metal to be deposited, an electrode made of the metal immersed in the aqueous solution or a combination thereof;

contacting a positive terminal of the direct current power supply with the aqueous solution;

contacting at least the portion of the surface comprising the reduced metal coordination complex with the aqueous solution; and

turning on the power supply.

~~25~~21. The method of claim 1, wherein depositing a conductive material onto the surface comprises electroless deposition of a metal onto the portion of the surface comprising the reduced metal coordination complex.

~~26~~22. The method of claim ~~25~~21, wherein electrolessly depositing a metal onto the portion of the surface comprising the reduced metal coordination complex comprises contacting at least the portion of the surface comprising the metal coordination complex with a solution comprising a salt of the metal, a complexing agent and a reducing agent.

~~27~~23. The method of claim 1, wherein depositing a conductive material onto the surface comprises deposition of a non-metallic conductive substance onto the portion of the surface comprising the reduced metal coordination complex.

~~28~~24. The method of claim ~~27~~23, wherein the non-metallic conductive material is deposited onto the portion of the surface comprising the reduced metal coordination complex by electrostatic dispersion.

~~29~~25. The method of claim 1, wherein the entire non-conductive substrate surface is activated and the metal coordination complex is deposited onto the entire surface.

~~30~~26. The method of claim 1, wherein the entire non-conductive substrate surface is activated and the metal coordination complex is deposited on a part of the activated surface.