21. The method according to claim 20, wherein the binding agent comprises or consists essentially of 3-aminopropyltrimethoxysilane (APTMS).

22. The method according to any one of claims 1 to 21, wherein attaching noble metal nanoparticles on a substrate comprises incubating the substrate in a suspension comprising noble metal nanoparticles to allow adsorption of the noble metal nanoparticles on the substrate.

23. The method according to claim 22, wherein the incubating time is about 10 minutes.

24. The method according to any one of claims 1 to 23, wherein the noble metal nanoparticles is contacted with the solution for about 10 minutes to form the gold nanowires.

25. The method according to any one of claims 1 to 24, further comprising depositing a layer of metal nanoparticles on the gold nanowires.

26. The method according to claim 25, wherein the metal nanoparticles comprise or consist essentially of silver.

~~27.Gold nanowires formed by a method according to any one of claims 1 to 26.~~

~~28.An electronic device comprising gold nanowires formed by a method according to any one of claims 1 to 26.~~