CLAIMS

~~1.~~ 1. A manufacturing method for manufacturing at least one contact probe (10) for a probe head of a test equipment of electronic devices, characterized in that it comprises a step of submicrometric 3D printing of said contact probe (10) as a whole with at least one printing material selected from a conductor material or a semiconductor material, said step of 3D printing comprises a step of outputting said submicron-sized printing material and a step of depositing said printing material according to a preset geometric 3D shape of said contact probe (10) so obtained, which has dimensions defined with submicrometric accuracy.

~~2.~~ 2. The manufacturing method according to claim 1, characterized in that said step of outputting said printing material comprises a step of forming a wire of said printing material with a diameter in the range of 0.1-0.9 ~~pm~~μm

~~3.~~ 3. The manufacturing method according to claim 1, characterized in that said step of outputting said printing material comprises a step of forming a wire of said printing material with a diameter in the range of 0.2-0.4 ~~pm~~μm.

~~4.~~ 4. The manufacturing method according to claim 1, characterized by comprising a preliminary step of heating said printing material.

~~5.~~ 5. The manufacturing method according to claim 4, characterized in that said preliminary step of heating comprises heating said printing material up to a softening point thereof.

~~6.~~ 6. The manufacturing method according to claim 4, characterized in that said preliminary step of heating comprises heating said printing material up to a melting point thereof.

~~7.~~ 7. The manufacturing method according to claim 1, characterized in that said step of 3D printing is carried out by a plurality of different printing materials.

~~8.~~ 8. The manufacturing method according to claim 7, characterized in that said step of 3D printing comprises a plurality of steps of outputting and depositing said plurality of different printing materials according to said preset geometric 3D shape of said contact probe (10).

probe (10) .

9. 9. The manufacturing method according to claim 8, characterized in that said steps of outputting and depositing are simultaneously or sequentially carried out.

10. 10. The manufacturing method according to claim 1, characterized in that said step of 3D printing uses a conductor material such as a metal selected from copper, silver, gold or alloys thereof, such as copper-niobium or copper-silver alloys or nickel or an alloy thereof, such as nickel-manganese, nickel-cobalt or nickel-phosphorus alloys or tungsten or an alloy thereof, such as nickel-tungsten, or a multilayer containing tungsten, or palladium or an alloy thereof, such as nickel-palladium, palladium-cobalt or palladium-tungsten, or platinum or rhodium or an alloy thereof, preferably tungsten.

11. The manufacturing method according to claim 1, characterized in that said step of 3D printing uses tungsten.

11. 12. The manufacturing method according to claim 1, characterized in that said step of 3D printing uses a semiconductor material, such as silicon or silicon carbide, possibly dopedor doped semiconductor material, such as doped silicon or doped silicon carbide.

12. 13. The manufacturing method according to claim 7, characterized in that said plurality of different printing materials comprise one or more conductor materials, such as metals selected from copper, silver, gold or alloys thereof, such as copper-niobium or copper-silver alloys or nickel or an alloy thereof, such as nickel-manganese, nickel-cobalt or nickel-phosphorus alloys or tungsten or an alloy thereof, such as nickel-tungsten, or a multilayer containing tungsten, or palladium or an alloy thereof, such as nickel-palladium, palladium-cobalt or palladium-tungsten, or platinum or rhodium or an alloy thereof, preferably tungsten or one or more semiconductor materials, such as silicon or possibly doped silicon carbide, or one or more insulating materials, in any combination.

13. 14. A contact probe (10) for a probe head of a test equipment of electronic devices, characterized in that it is provided by a step of submicrometric 3D printing with at least one printing material

selected from a conductor material or a semiconductor material, said contact probe having dimensions defined with submicrometric accuracy.

15. The contact probe (10) according to claim ~~13~~14, characterized in that it comprises a plurality of different materials including one or more conductor materials such as metals selected from copper, silver, gold or alloys thereof, such as copper-niobium or copper-silver alloys or nickel or an alloy thereof, such as nickel-manganese, nickel-cobalt or nickel-phosphorus alloys or tungsten or an alloy thereof, such as nickel-tungsten, or a multilayer containing tungsten, or palladium or an alloy thereof, such as nickel-palladium, palladium-cobalt or palladium-tungsten, or platinum or rhodium or an alloy thereof, ~~preferably tungsten~~ or one or more semiconductor materials such as silicon or silicon carbide, possibly doped, or one or more insulating materials, in any combination.

~~15~~16. The contact probe (10) according to claim ~~14~~15, characterized
in that said materials are combined in an interpenetrated or interlaced shape~~, possibly~~.

17. The contact probe (10) according to claim 16, characterized in that said materials are jointed with empty portions or air zones.