Claims

1. A method for manufacturing at least one electrode ~~(110)~~ of an analyte sensor ~~(112)~~, the method comprising the following steps:
   a) ~~P~~providing ~~(116)~~ a stencil ~~(118)~~, wherein the stencil ~~(118)~~ comprises a first stencil side ~~(120)~~, a second stencil side ~~(122)~~ and at least one through hole ~~(124)~~ reaching from the first stencil side ~~(120)~~ to the second stencil side ~~(122)~~, wherein at least one of the first stencil side ~~(120)~~ and the second stencil side ~~(122)~~ has first wettability properties;
   b) providing ~~(126)~~ a substrate ~~(128)~~, wherein the substrate ~~(128)~~ comprises a first side ~~(130)~~ and a second side ~~(134)~~;
   c) applying ~~(136)~~ the stencil ~~(118)~~ to the first side ~~(130)~~ of the substrate ~~(128)~~;
   d) applying ~~(138)~~ a low viscosity composition ~~(140)~~ into the through hole ~~(124)~~ of the stencil ~~(118)~~, wherein the low viscosity composition ~~(140)~~ has second wettability properties opposing to the first wettability properties of the at least one of the first stencil side ~~(120)~~ and the second stencil side ~~(122)~~;
   e) drying ~~(141)~~ the low viscosity composition ~~(140)~~;
   f) obtaining ~~(142)~~ the at least one electrode ~~(110)~~.

2. The method according to claim 1, wherein the first wettability properties are hydrophobic or hydrophilic, wherein the second wettability properties are hydrophobic or hydrophilic.

3. The method according to any one of claims 1 or 2, wherein the second wettability properties are hydrophilic, wherein both stencil sides ~~(120, 122)~~ have the same first wettability properties, wherein the first wettability properties are hydrophobic.

4. The method according to any one of claims 1 to 3, wherein a whole surface of the stencil ~~(118)~~ has first wettability properties, wherein the first wettability properties are hydrophobic.

5. The method according to any one of claims 3 or 4, wherein the stencil ~~(118)~~ is hydrophobized with silicon.

6. The method according to any one of claims 1 to 5, wherein the low viscosity composition ~~(140)~~ comprises water and/or an osmium based polymer.

7. The method according to any one of claims 1 to 6, wherein the viscosity of the low viscosity composition ~~(140)~~ is ≤ 200 mPas, preferably ≤ 100 mPas, more preferably ≤ 50 mPas.

8. The method according to any one of claims 1 to 7, wherein the first side ~~(130)~~ of the substrate ~~(128)~~ has third wettability properties opposing to the first wettability properties, wherein the third wettability properties are hydrophilic or hydrophobic.

9. The method according to any one of claims 1 to 8, wherein the stencil ~~(118)~~ has a thickness of ≥ 50 µm, preferably of ≥ 100 µm, more preferably ≥ 500 µm.

10. The method according to any one of claims 1 to 9, wherein the stencil ~~(118)~~ comprises a plurality of through holes ~~(124)~~, wherein the through holes ~~(124)~~ have diameters of ≤ 4 mm, preferably ≤ 1 mm, more preferably ≤ 0.5 mm.

11. The method according to any one of claims 1 to 10, wherein first side ~~(130)~~ of the substrate ~~(128)~~ comprises at least one conductive material ~~(132)~~ .

12. The method according to any one of claims 1 to 11, wherein the obtaining of the electrode ~~(110)~~ comprises removing the stencil ~~(118)~~ from the substrate ~~(128)~~.

13. A method for manufacturing at least one analyte sensor ~~(112)~~, the method comprising manufacturing at least one electrode ~~(110)~~ according to the method of any one of claims 1 to 12, wherein the method further comprises obtaining the analyte sensor ~~(112)~~ by cutting the substrate ~~(128)~~.

14. An ~~A~~analyte sensor ~~(112)~~ for determining at least one analyte in a sample of bodily fluid, wherein the analyte sensor ~~(112)~~ comprises at least one electrode ~~(110)~~ manufactured by using the~~a~~ method according to any one of claims 1 to 12.

15. Use of the analyte sensor ~~(112)~~ according to claim 14 for detecting at least one analyte in a sample.