CLAIMS

1. Device (1) for manipulating particles (3) and comprising a flow generator (20) arranged to generate a transport fluid flow (2), and a screen (10) having a first outer surface (11) from which a particle (3) structure (30) can be formed, the screen (10) comprising through-holes (12) opening via openings onto said first outer surface (11) and the transport fluid flow (2) being provided to transport the particles (3) to or from the first outer surface (11), the device (1) being arranged so that the transport fluid flow (2) only passes through predetermined portions of the first outer surface (11) of the screen (10).

2. Device (1) according to claim 1, characterised in that it comprises a means of movement of the flow generator (20).

3. Device (1) according to claim 1 or 2, characterised in that it comprises a mask (40) between the flow generator (20) and the screen (10).

4. Device (1) according to claim 3, characterised in that it comprises a means of movement of the mask (40).

5. Device (1) according to any one of claims 3 to 4, characterised in that the mask (40) is arranged such that the configuration of the open and closed portions thereof can be modified.

6. Device (1) according to any one of the preceding claims, characterised in that it comprises a valve matrix (41).

7. Device (1) according to any one of the preceding claims, characterised in that it comprises a means of movement of the flow generator (20), a mask (40) between the flow generator (20) and the screen (10) and a means of movement of the mask (40), the means of movement of the mask (40) being coupled with the means of movement of the flow generator (20) such that the transport fluid flow (2) and the mask (40) correspond to the same portions of the first outer surface (11).

8. Device (1) according to any one of the preceding claims, characterised in that the flow generator (20) comprises an ejection device provided to create the transport fluid flow (2) from the flow generator (20) to the first outer surface (11).

9. Device (1) according to any one of the preceding claims , characterised in that the first outer surface (11) of the screen (10) is mainly a convex surface, for example a cylinder, delimiting at least partially an interior space (18).

10. Device (1) according to claim 9, characterised in that the flow generator (20) comprises a first portion (121) located in the interior space (18) and a second portion (122) located outside the interior space (18), the first portion (121) and the second portion (122) being connected fluidically by a fluidic communication means (123).

11. Device (1) according to claim 10, characterised in that the first portion (121) or the second portion (122) of the flow generator (20) comprises a plurality of valves (41).

12. Device (1) according to claim 11, characterised in that each valve (41) is arranged to control a transport fluid flow element arranged to pass through a portion of the first outer surface (11) of the screen (10).

13. Device (1) according to any one of claims 10 to 12, characterised in that the first portion (121) of the flow generator (20) comprises a plurality of openings directed towards the first outer surface (11) of the screen (10), the device (1) being arranged so that a transport fluid flow element passes into one of said openings.

14. Device (1) according to any one of the preceding claims, characterised in that it further comprises a suction means arranged to retain the particles on the first outer surface (11).

15. Device (1) according to any one of the preceding claims, characterised in that it further comprises a means of movement of the screen (10).

16. 3D printing system comprising at least one device (1) according to any one of the preceding claims, and an agglomeration means (75).

17. 3D printing system according to claim 16, further comprising a means for bringing together and for separating of the screen (10a, 10b) and of a 3D printing structure (72).

18. Method for manipulating particles (3) and comprising:

(a) the supplying of a device (1) for manipulating particles (3) according to any one of claims 1 to 15,

(b) the supplying of particles (3) to said device (1), and

(c) the transporting of particles (3) by the transport fluid flow (2) to or from the first outer surface (11) of the screen (10).