Claims:

1. A multilayer filter comprising at least a first layer comprising a plurality of openings and at least a second permeable layer overlaying the first layer and reducing the size of the openings, wherein the overlaying second layer comprises a configuration partitioning substantially every individual opening to reduce its size, and wherein the configuration of the second layer comprises an array of strips partitioning the openings.

~~2. The multilayer filter according to claim 1, wherein the overlaying second layer comprises a configuration partitioning substantially every individual opening to reduce its size.~~

23. The multilayer filter according to ~~any one of the preceding~~ claims 1, further comprising one or more successive permeable layers overlaying the second layer, wherein each layer further successively reduces the size of the openings.

~~4. The multilayer filter according to any one of the preceding claims, wherein the openings are quadrilateral or oval shaped.~~

~~5. The multilayer filter according to any one of the preceding claims, wherein the openings are rectangles or squares.~~

~~6. The multilayer filter according to any one of the preceding claims, wherein the openings are arranged in a substantially regular array.~~

~~7. The multilayer filter according to any one of the preceding claims, wherein the openings are substantially uniform in size.~~

~~8. The multilayer filter according to any one of the preceding claims, wherein the configuration of the second layer comprises an array of strips partitioning the openings.~~

39. The multilayer filter according to ~~any one of the preceding~~ claims 1, wherein the largest dimension of an opening is ≤ 500 μm.

~~10. The multilayer filter according to any one of the preceding claims, wherein the largest dimension of an opening is from ~10 nm to ~500 μm.~~

~~11. The multilayer filter according to any one of the preceding claims, wherein the largest dimension of an opening is less than or equal to half of the thickness of the multilayer filter.~~

412. The multilayer filter according to ~~any one of the preceding~~ claims 1, further comprising at least one supporting permeable layer.

~~13. The multilayer filter according to claim 12, wherein the supporting permeable layer comprises a grid structure.~~

~~14. The multilayer filter according to any one of the preceding claims, wherein each layer is independently polymeric, metallic, silicon or a gel.~~

~~15. The filter according to claims 13 or 14, wherein the supporting permeable layer comprises silicon, plastics, or metal.~~

516. The multilayer filter according to ~~any one of the preceding~~ claims 1, wherein the layers are coherent.

~~17. The filter according to any one of the preceding claims, for separating particles from a fluid.~~

618. A method for fabricating a multilayer filter, comprising the steps of:

(i) depositing a sacrificial layer on a substrate;

(ii) depositing a first layer onto the sacrificial layer; either

A)(iii) identifying on the first layer a first pattern comprising regions to be removed for so as to form a plurality of openings in the first layer;

(iv) depositing at least a second layer to overlay the first layer;

(v) identifying on the second layer a second pattern comprising regions to be removed so as to form a configuration in the second layer; and fabricating a plurality of openings in the first layer according to the first pattern and fabricating a configuration in the second layer according to the second pattern, wherein the configuration reduces the size of the openings of the first layer; or

B(iii) fabricating a plurality of openings in the first layer;

(iv) depositing at least a second layer to overlay the first layer;

(v) fabricating a configuration in the second layer, wherein the configuration reduces the size of the openings of the first layer;

and for (A) or (B), (vi) releasing the layers minus the sacrificial layer from the substrate to give the multilayer filter, wherein the configuration of the second layer comprises an array of strips partitioning the openings.

7~~19~~. The method according to claim 6~~18~~, wherein the configuration partitions substantially every individual opening, thereby reducing the size of the openings.

8~~20~~. The method according to claim 6~~18 or 19~~, wherein step (ii) comprises depositing a first photoresist layer onto the sacrificial layer.

9~~21~~. The method according to claim 8~~20~~, wherein step A(iii) comprises contacting the first photoresist layer with a mask comprising a pattern of a plurality of openings to be copied to the first photoresist layer and exposing the masked first photoresist layer to a suitable light source or

step B(iii) comprises contacting the first photoresist layer with a mask comprising a pattern of a plurality of openings to be copied to the first photoresist layer and performing photolithography to form a plurality of openings on the first photoresist layer.

1022. The method according to ~~any one of the~~ claims ~~6~~18 ~~to 21~~, wherein step A(iv) or B(iv) comprises depositing at least a second photoresist layer onto the first layer.

1123. The method according to claim 1022, wherein step A(v) comprises contacting the second photoresist layer with a mask comprising a pattern of a configuration to be copied to the second photoresist layer and exposing the masked second photoresist layer to a suitable light source or step B(v) comprises contacting the second photoresist layer with a mask comprising a pattern of a configuration to be copied to the photoresist layer and performing photolithography to form a configuration on the second photoresist layer; wherein the configuration of the second layer reduces the size of the openings of the first layer.

~~24. The method according to claims 21 and 23, wherein step A(v) further comprises removing the exposed regions of the first and second photoresist layers to form the configuration in the second photoresist layer and the openings in the first photoresist layer, wherein the configuration of the second layer reduces the size of the openings of the first layer.~~

~~25. The method according to any one of claims 18 to 24, wherein the configuration of the second layer partitions substantially every individual opening to reduce its size.~~

~~26. The method according to any one of claims 18 to 25, further comprising fabricating one or more successive permeable layers overlaying the~~

~~second layer, wherein each layer further successively reduces the size of the openings.~~

~~27. The method according to any one of claims 18 to 26, wherein the openings are quadrilateral or oval shaped.~~

~~28. The method according to any one of claims 18 to 27, wherein the openings are rectangles or squares.~~

~~29. The method according to any one of claims 18 to 28, wherein the openings are arranged in a substantially regular array.~~

~~30. The method according to any one of claims 18 to 29, wherein the openings are substantially uniform in size.~~

~~31. The method according to claim 29 or 30, wherein the configuration comprises an array of strips partitioning the openings.~~

12~~32~~. The method according to ~~any one of~~ claims 6~~18 to 31~~, wherein the largest dimension of an opening is ≤ 500 μm.

~~33. The method according to any one of claims 18 to 31, wherein the largest dimension of an opening is ~ 10 nm to ~500 μm.~~

~~34. The method according to any one of claims 18 to 33, comprising fabricating the largest dimension of an opening to less than or equal to half of the thickness of the multilayer filter.~~

13~~35~~. The method according to ~~any one of~~ claims 6~~18 to 34~~, further comprising fabricating at least one supporting permeable layer over the multilayer filter.

~~36. The method according to claim 35, wherein the supporting permeable layer comprises a grid structure.~~

~~37. The method according to any one of claims 18 to 36, wherein the sacrificial layer comprises a dissolvable material.~~

14~~38~~. A method of preparing a filter comprising the steps of:

(i) fabricating a first layer comprising a plurality of openings;

(ii) fabricating at least a separate second permeable layer comprising a configuration;

(iii) positioning the second layer to overlay the first layer, wherein the configuration of the second layer reduces the size of the openings, and wherein the configuration of the second layer comprises an array of strips partitioning the openings.

~~39. The method according to claim 38, wherein the configuration of the second layer partitions the openings, thereby reducing the size of the openings.~~

~~40. The method according to claim 38 or 39, wherein the openings are arranged in a substantially regular array.~~

~~41. The method according to any one of claims 38 to 40, wherein the openings are substantially uniform in size.~~

~~42. The method according to claim 40 or 41, wherein the configuration of the second layer comprises an array of strips partitioning the openings.~~

15~~43~~. The method according to ~~any one of~~ claims 14~~38 to 42~~, further comprising fabricating one or more successive permeable layers to overlay the second layer, wherein each successive permeable layer further successively reduces the size of the openings.

16~~44~~. The method according to ~~any one of~~ claims ~~14~~38 ~~to 43~~, wherein the filter further comprises at least one supporting permeable layer.

17~~45~~. The method according to claim 16~~44~~, wherein the supporting permeable layer comprises a grid structure.

18~~46~~. The method according to ~~any one of~~ claims ~~6~~18 ~~to 45~~, wherein the layers are coherent.

~~47. The method according to any one of claims 18 to 46, wherein each layer is independently polymeric, metallic, silicon or a gel.~~

~~48. The method according to any one of claims 35 to 36 or 44 to 45, wherein the supporting permeable layer comprises silicon, plastics, or metal.~~