CLAIMS

1. An apparatus, comprising:

a main body part of a laminar flow reaction chamber comprising an inlet opening for precursor gas at its front side, an exhaust opening at its rear side, and a lid opening at its top or bottom side; and

a substrate holder configured to accommodate a batch of substrates, the surfaces of the substrates facing each other thus forming a substrate stack, the substrate holder forming a lid to cover the lid opening.

2. The apparatus of claim 1, wherein the inlet opening is reaction chamber wide or reaction chamber high.

3. The apparatus of claim 1 or 2, comprising a throat downstream the inlet opening.

4. The apparatus of claim 3, wherein the throat is a concave throat.

5. The apparatus of claim 4, wherein the throat is symmetrical.

6. The apparatus of claim 4, wherein the throat is asymmetrical.

7. The apparatus of any preceding claim, wherein side walls of the main body part of the reaction chamber curve inwards towards the exhaust opening.

8. The apparatus of claim 7, wherein the side walls of the main body part of the reaction chamber are free from flow obstacles.

9. The apparatus of any preceding claim, wherein the main body part of the reaction chamber is monolithic.

10. The apparatus of any preceding claim, wherein the substrate holder is monolithic.

11. The apparatus of any preceding claim, wherein the substrate holder comprises two opposite protruding parts protruding from the substrate holder and being configured to support the substrates.

12. The apparatus of claim 11, wherein the substrate holder comprises a smooth planar lid part, and the opposite protruding parts protrude from the smooth planar lid part to accommodate substrate(s).

13. The apparatus of claim 11 or 12, wherein the two opposite protruding parts follow the shape of a round substrate.

14. The apparatus of any of claims 11-13, wherein the two opposite protruding parts comprise ridges or grooves to accommodate the substrates.

15. The apparatus of claim 14, wherein the spacing of the ridges or grooves is equal or unequal.

16. The apparatus of any preceding claim, wherein the closest distance from an outermost substrate to its closest reaction chamber wall is different from or same as a closest distance between adjacent substrates.

17. The apparatus of any preceding claim, comprising an exhaust line in or attached to the main body part of the reaction chamber.

18. The apparatus of claim 17, wherein the exhaust line takes a turn.

19. The apparatus of claim 18, wherein the turn is perpendicular to the direction of the laminar flow.

20. The apparatus of claim 18 or 19, wherein the turn is 90 degrees.