Patent claims

1. A method for producing a semiconductor wafer with epitaxial layer in a deposition chamber, comprising
placing a substrate wafer in the edge region of the rear side of the substrate wafer onto a placement area of a susceptor in a load lock chamber;
loading the deposition chamber with the susceptor and the substrate wafer lying on the susceptor by contacting the susceptor and transporting the susceptor and the substrate wafer lying on the susceptor from the load lock chamber into the deposition chamber;
depositing an epitaxial layer on the substrate wafer;
unloading the deposition chamber by contacting the susceptor and transporting the susceptor and a semiconductor wafer with epitaxial layer, said semiconductor wafer with epitaxial layer having been produced in the course of depositing the epitaxial layer and lying on the susceptor during the transport from the deposition chamber into the load lock chamber; and
separating the susceptor and the semiconductor wafer with epitaxial layer in the load lock chamber.

2. The method as claimed in claim 1, comprising unloading the deposition chamber at a point in time at which the temperature of the semiconductor wafer with epitaxial layer is not less than 650°C.

3. The method as claimed in claim 1 or claim 2, comprising, during the process of depositing the epitaxial layer on the substrate wafer, providing a further substrate wafer in the load lock chamber for transporting the further substrate wafer into the deposition chamber.

4. An apparatus for producing a semiconductor wafer with epitaxial layer, comprising
a deposition chamber;
a load lock chamber;
a susceptor having a placement area for placing a substrate wafer in the edge region of the rear side of the substrate wafer;

lift elements in the load lock chamber for raising and lowering the susceptor and – lying on the susceptor - a substrate wafer or semiconductor wafer with epitaxial layer with contacting of the susceptor from below; and

a transport tool, contacting the susceptor, for transporting the susceptor and a substrate wafer lying on the susceptor from the load lock chamber into the deposition chamber and for transporting the susceptor and a semiconductor wafer with epitaxial layer, said semiconductor wafer lying on the susceptor, from the deposition chamber into the load lock chamber; and

lift pins for lifting off the semiconductor wafer with epitaxial layer from the susceptor in the load lock chamber.

5. The apparatus as claimed in claim 4, characterized by upper and lower holding clamps in the load lock chamber for holding the substrate wafer and the semiconductor wafer with epitaxial layer.

6. The apparatus as claimed in claim 4 or claim 5, characterized by a two-part susceptor consisting of a ring, which comprises the placement area, and a baseplate, which is arranged in the deposition chamber.