CLAIMS

1. A system (100) for simultaneously producing a first and a second epitaxial monocrystalline layer on a respective first and second substrate, comprising:

a first inner container (3) defining a first cavity for accommodating a first source material and the first substrate, wherein the first source material is arranged below the first substrate;

a second inner container (4) defining a second cavity for accommodating a second source material and the second substrate, wherein the second source material is arranged above the second substrate;

an insulation container (6) arranged to accommodate the first and second inner containers (3, 4) therein, wherein the first inner container (3) is arranged above the second inner container (4);

an outer container (7) arranged to accommodate the insulation container (6) and the first and second inner containers (3, 4) therein; and

heating means (8) arranged outside the outer container (7) and configured to heat the first and second cavities simultaneously.

2. The system according to claim 1, further comprising a heating body (5) arranged within the insulation container (6), between the first and second inner containers (3, 4), and wherein the heating means (8) is further configured to heat the heating body (5) and the first and second cavities simultaneously.

3. The system (100) according to claim 2, wherein the first inner container (3), the second inner container (4) and the heating body (5) are formed in one piece.

4. The system (100) according to any of the preceding claims, wherein the first and second inner containers (3, 4) are cylindrical in shape and have the same diameter.

5. The system (100) according to any of the preceding claims, wherein the first inner container (3) comprises an upper part and a bottom part; the second inner container (4) comprises an upper part and a bottom part; and

the bottom part of the first inner container (3) is essentially identical to the upper part of the second inner container (4).

6. The system (100) according to any of the preceding claims, further comprising

a first means (314) for arranging the first source material at a predetermined distance from the first substrate in the first cavity; and

a second means (325) for arranging the second source material at a predetermined distance from the second substrate in the second cavity.

7. The system (100) according to any of the preceding claims, wherein the insulation container (6) and the outer container (7) are cylindrical in shape, and the first and second source materials and the first and second substrates are disk-shaped.

8. The system (100) according to any of the preceding claims, further comprising

a first carbon getter arranged inside the first inner container (3), and

a second carbon getter arranged inside the second inner container (4).

9. The system (100) according to any of the preceding claims, wherein the heating means (8) is movable along the outer container (7).

10. The system (100) according to any of the preceding claims, wherein the first and second source materials are monolithic silicon carbide.

11. A method of simultaneously producing a first and a second epitaxial monocrystalline layer on a respective first and second substrate comprising:

providing a first inner container (3) defining a first cavity for accommodating a first source material and the first substrate;

arranging the first source material below the first substrate

providing a second inner container (4) defining a second cavity for accommodating a second source material and the second substrate;

arranging the second source material above the second substrate

arranging the first source material and the first substrate in the first cavity, and the second source material and the second substrate in the second cavity;

arranging the first and second inner containers (3, 4) within an insulation container (6);

arranging the insulation container (6) within an outer container (7),

providing heating means (8) outside the outer container (7) to heat the first and second cavities simultaneously;

evacuating the first and second cavities to a predetermined pressure;

introducing an inert gas into the first and second cavities;

raising the temperature in the first and second cavities simultaneously to a predetermined growth temperature by the heating means (8);

maintaining the predetermined growth temperature in the first and second cavities until a predetermined thickness of the first and second epitaxial monocrystalline layers on the respective first and second substrates have been achieved;

cooling the first and second substrates.

12. The method according to claim 11, wherein the step of arranging the first and second source materials and the first and second substrates in the respective first and second cavities, comprises

arranging the first source material below the first substrate; and

arranging the second source material above the second substrate.

13. The method according to claim 11 or 12, wherein the step of arranging the first and second inner containers (3, 4) within an insulation container (6) comprises arranging the first inner container (3) above the second inner container (4).

14. The method according to any one of claims 11-13, further comprising providing a heating body (5) between the first inner container (3) and the second inner container (4).

15. The method according to claim 14, wherein the step of raising the temperature of the first and second cavities further comprises simultaneously raising the temperature of the heating body (5).