CLAIMS

1. A method for fabricating a substrate for a radiofrequency or power electronics device, comprising

- forming a support substrate comprising deposition of at least one layer of polycrystalline silicon carbide by chemical vapor deposition (CVD) in an atmosphere comprising a mixture of argon and a deposition precursor that is fluidified in hydrogen, said chemical vapor deposition being carried out under $Ar/(Ar+H_2)$ ratio and temperature conditions suitable for forming carbon inclusions in said silicon carbide layer, and
- assembling the support substrate and a surface layer made of a monocrystalline material.

2. The method as claimed in claim 1, wherein the deposition precursor is methyltrichlorosilane (CH_3SiCl_3).

3. The method as claimed in claim 1 or claim 2, wherein the surface layer is made of a semiconductor material, preferably of silicon carbide or of gallium nitride or of diamond.

4. The method as claimed in one of the preceding claims, wherein at least a first phase of the chemical vapor deposition is carried out at a temperature of greater than 1200°C, preferably greater than 1400°C.

5. The method as claimed in one of the preceding claims, wherein a first chemical vapor deposition start temperature is greater than a second chemical vapor deposition end temperature.

6. The method as claimed in one of the preceding claims, wherein the $Ar/(Ar+H_2)$ ratio decreases during the chemical vapor deposition step.

7. The method as claimed in one of the preceding claims, wherein the formation of the support substrate further comprises a step of assembling said at least one silicon carbide layer comprising the carbon inclusions with a base layer made of porous silicon carbide.

8. A substrate for a radiofrequency or power electronics device, comprising

- a support substrate made of polycrystalline silicon carbide having a front face and a rear face, and
- a surface layer made of monocrystalline material extending over the front face of said support substrate,

said substrate being characterized in that at least a portion of said support substrate comprises a plurality of silicon carbide grains having an elongated shape and oriented in a direction perpendicular to the surface of the substrate and a plurality of carbon inclusions located between said grains.

9. The substrate as claimed in claim 8, wherein the surface layer is made of a semiconductor material, preferably of silicon carbide or of gallium nitride or of diamond.

10. The substrate as claimed in claim 8 or claim 9, wherein the ratio between the length and the width of the silicon carbide grains in the support substrate is greater than or equal to 1:1.2, advantageously greater than 1:10 and more advantageously greater than 1:20.

11. The substrate as claimed in any one of claims 8 to 10, wherein the carbon inclusions are discontinuous.

12. The substrate as claimed in any one of claims 8 to 11, wherein the ratio between the width and the length of the carbon inclusions is 1:1.2, advantageously greater than 1:20 and more advantageously greater than 1:30.

13. The substrate as claimed in any one of claims 8 to 12, wherein the support substrate exhibits a concentration gradient of the carbon inclusions, such that the density of the carbon inclusions increases from the front face towards the rear face.

14. The substrate as claimed in any one of claims 8 to 13, wherein only a portion of the support substrate comprises said carbon inclusions and the support substrate further comprises a portion devoid of carbon inclusions between the surface layer of monocrystalline SiC and the portion comprising the carbon inclusions.

15. The substrate as claimed in any one of claims 8 to 14, wherein the volume ratio of the carbon inclusions in the support substrate is between 1% and 40%, preferably between 1% and 20%.

16. An electronic device comprising a substrate as claimed in any one of claims 8 to 15 and at least one radiofrequency or power electronics component formed in or on the surface layer, and a heat removal device, the substrate being brazed to the heat removal device via a filler material such that the filler material is in integral contact with at least a part of the portion comprising carbon inclusions on the rear face of the support substrate.