CLAIMS

1. A SiC material comprising a SiC layer including a region which has an average crystal grain size of 3.5 μm or less, and is a (111) plane preferential growth in X-ray diffraction analysis,

wherein the region has a diffraction intensity ratio (I) of the X-ray diffraction analysis calculated according to Equation 1 below of 0.5 or less:

[Equation 1]

Diffraction intensity ratio (I) = (peak intensity of (200) plane + peak intensity of (220) plane + peak intensity of (311) plane)/peak intensity of (111) plane; and

wherein a thermal conductivity of the region is lower than a maximum thermal conductivity or an average thermal conductivity of the entire SiC layer.

2. The SiC material of claim 1, wherein the region has the average crystal grain size of 0.5 μm to 3.5 μm.

3. The SiC material of claim 1, wherein the region has a diffraction intensity ratio (I) of the X-ray diffraction analysis calculated according to Equation 2 below of 0.5 or less:

[Equation 2]

Diffraction intensity ratio (I) = (peak intensity of (200) plane + peak intensity of (220) plane)/peak intensity of (111) plane.

4. The SiC material of claim 1 or claim 3, wherein the diffraction intensity ratio (I) is 0.001 to 0.3.

5. The SiC material of claim 1, wherein the thermal conductivity of the region is 200 W/mk or less.

6. The SiC material of claim 1, wherein the region is deposited by a CVD method.

7. The SiC material of claim 1, wherein the SiC material is a material of a part used in a plasma processing apparatus for manufacturing a semiconductor non-memory.

8. The SiC material of claim 1, wherein the SiC material is a ring for mounting a wafer, and the region is formed in a region where the wafer is mounted.

9. The SiC material of claim 1, wherein the region has a temperature deviation of 1°C or less.

10. The SiC material of claim 1, wherein the region is formed to 50% or more and less than 100% of an area of the SiC layer.

11. The SiC material of claim 1, wherein the SiC layer has a thickness of 2 mm or more.

12. A SiC material comprising a SiC layer which has an average crystal grain size of 3.5 μm or less, and is a (111) plane preferential growth in X-ray diffraction analysis,

wherein the SiC layer has a diffraction intensity ratio (I) of the X-ray diffraction

analysis calculated according to Equation 1 below of 0.5 or less:

[Equation 1]

Diffraction intensity ratio (I) = (peak intensity of (200) plane + peak intensity of (220) plane + peak intensity of (311) plane)/peak intensity of (111) plane; and

wherein a thermal conductivity of the SiC layer is lower than a maximum thermal conductivity or an average thermal conductivity of the entire SiC material.

13. The SiC material of claim 12, wherein the SiC layer has a thermal conductivity of 200 W/mk or less.

14. The SiC material of claim 12, wherein the SiC layer has a diffraction intensity ratio (I) of the X-ray diffraction analysis calculated according to Equation 2 below of 0.5 or less:

[Equation 2]

Diffraction intensity ratio (I) = (peak intensity of (200) plane + peak intensity of (220) plane)/peak intensity of (111) plane.

15. The SiC material of claim 12, wherein the SiC layer has a thickness of 2 mm or more.

16. A method for manufacturing a SiC material, the method comprising steps of:

preparing a substrate; and

forming a SiC layer on the substrate using a CVD method,

wherein the SiC layer has a region formed in at least a portion thereof, the region has an average crystal grain size of 3.5 μm or less, and is a (111) plane preferential growth in X-

ray diffraction analysis,

wherein the region has a diffraction intensity ratio (I) of the X-ray diffraction analysis calculated according to Equation 1 below of 0.5 or less:

[Equation 1]

Diffraction intensity ratio (I) = (peak intensity of (200) plane + peak intensity of (220) plane + peak intensity of (311) plane)/peak intensity of (111) plane; and

wherein a thermal conductivity of the region is lower than a maximum thermal conductivity or an average thermal conductivity of the entire SiC layer.