CLAIMS

1. A SiC material comprising a SiC layer including a ~~low thermal conductivity~~ 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 ~~low thermal conductivity~~ 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 ~~low thermal conductivity~~ region has the average crystal grain size of 0.5 μm to 3.5 μm.

3. The SiC material of claim 1, wherein the ~~low thermal conductivity~~ 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 ~~low thermal conductivity region has a~~ thermal conductivity of the region is 200 W/mk or less.

6. The SiC material of claim 1, wherein the ~~low thermal conductivity~~ 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 ~~low thermal conductivity~~ region is formed in a region where the wafer is mounted.

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

10. The SiC material of claim 1, wherein the ~~low thermal conductivity~~ 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 ~~low thermal conductivity~~ region formed in at least a portion

thereof, the ~~low thermal conductivity~~ 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 ~~SiC layer~~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.