WHAT IS CLAIMED IS:

1. An ion generating device for an ion implanter comprising: an arc chamber and, as constituting elements of the arc chamber,

a chamber wall mounted inside the arc chamber to define a space where ions are generated, wherein the chamber wall covers four sides of the arc chamber;

an electron emitting cathode mounted inside the arc chamber, comprising a lateral portion fixed to one side of the arc chamber and defining a space where a filament is installed and a front portion exposed toward the arc chamber and having a surface from which electrons are emitted;

a repeller comprising a reflective part placed inside the arc chamber and opposite the cathode of the ion generating device, and a terminal part extending from the reflective part and to which a predetermined voltage is applied; and a slit member comprising a slit portion and a slit through which ion beams are emitted from the ion generating device;

wherein one or more of:

the chamber wall in its portion corresponding to at least one of the four sides of the arc chamber, the election emitting cathode, the repeller in its reflective part, and the slit member,

has/have a refractory metal material as a base material forming its shape and has a coating structure comprising a semicarbide layer on at least one surface of the base material, wherein the semicarbide layer comprises a refractory metal carbide structure in which a continuous or discontinuous refractory metal monocarbide layer is layered on a continuous or discontinuous refractory metal semicarbide layer.

2. The ion generating device according to claim 1, wherein the coating structure comprising the semicarbide layer comprises the refractory metal carbide structure in which a continuous or discontinuous layer having a hexagonal crystal structure is continuously or discontinuously layered on a continuous or discontinuous

layer having at least one crystal structure selected from the group consisting of epsilon crystal structures and beta crystal structures.

3. The ion generating device according to claim 1, wherein when a ratio of a weight of a crystal structure constituting the refractory metal monocarbide layer (Wm) to a weight of a crystal structure constituting the refractory metal semicarbide layer (Ws) is defined as X (Wm/Ws), X is equal to or lower than 5 (where Wm and Ws are determined by multi-phase electron backscatter diffraction (EBSD) analysis).

4. The ion generating device according to claim 3, wherein a weight of the base material (Ww), the weight of the crystal structure constituting the refractory metal monocarbide layer (Wm), and the weight of the crystal structure constituting the refractory metal semicarbide layer (Ws) are in a ratio of 90-95:0.8-4:9.2-1 (Ww:Wm:Ws) (where Ww, Wm, and Ws are determined by multi-phase electron backscatter diffraction (EBSD) analysis).

5. The ion generating device according to claim 1, wherein the semicarbide coating layer has a minimum thickness of 2 μm and a maximum thickness of 300 μm.

6. The ion generating device according to claim 1, wherein the terminal part has a refractory metal material as a base material forming its shape and has a coating structure comprising a semicarbide layer on at least one surface of the base material.

7. The ion generating device according to claim 1, wherein, in the case where one or more elements of the repeller, the cathode, the chamber wall, and the slit member constituting the arc chamber of the ion generating device have a refractory metal material as a base material forming their shapes and have a coating structure including a semicarbide layer on at least one surface of the base material, the other constituent elements of the arc chamber are made of a refractory metal material as a base material.

8. The ion generating device according to claim 8, wherein the other constituent elements of the arc chamber is made of a material having a coating structure including a semicarbide layer on at least one surface of the base material or another suitable material and preferably a carbon or carbon/hydrogen compound.