CLAIMS

1. A scanning electron microscope, comprising:

an electron optical column, arranged to generate electron beams and focus the electron beams on a specimen;

a first detector, arranged to receive electrons generated by the electron beams acting on the specimen; and

a second detector, arranged to receive photons generated by the electron beams acting on the specimen;

wherein the second detector comprises a reflector and a photon detector; the reflector is in a ring shape and is arranged to cover a perimeter of the specimen; and the reflector is arranged to reflect the photons generated on the specimen onto the photon detector;

wherein a reflective film is provided at a lower surface of the first detector and is arranged to reflect the photons incident on the lower surface of the first detector to the second detector.

2. The scanning electron microscope of claim 1, wherein the reflector is a parabolic reflecting mirror or an ellipsoidal reflecting mirror.

3. The scanning electron microscope of claim 1, wherein the reflector is in the ring shape formed by at least two ellipsoidal reflecting mirrors connected to each other.

4. The scanning electron microscope of claim 1, wherein the first detector is a backscattered electron detector, and the second detector is a cathode fluorescence detector.

5. The scanning electron microscope of any one of claims 1 to 4, wherein the photon detector is in a ring shape, and the first detector is in a ring shape; and

the first detector, the reflector and the photon detector are on a same axis, and the axis is a center of a principal optic axis of the electron beams generated by an electron source.

6. The scanning electron microscope of claim 5, wherein the reflector comprises a light outlet and a port which are connected, and the light outlet faces towards the specimen.

7. The scanning electron microscope of claim 6, wherein a diameter of the port is greater than or equal to a peripheral diameter of the first detector; and

a diameter of the light outlet is greater than a diameter of a center hole of the photon detector.

8. The scanning electron microscope of claim 5, wherein the reflector comprises a light outlet and a port which are connected, and the light outlet faces towards the first detector.

9. The scanning electron microscope of claim 6, wherein a diameter of the light outlet is greater than a diameter of a center hole of the photon detector; and

a diameter of a center hole of the photon detector is greater than or equal to a peripheral diameter of the first detector.