CLAIMS

1. An imaging system for a detection device in a multi-beam apparatus,
comprising:

means for focusing a plurality of charged particle beams emanated from a sample surface to a plurality of detection elements of the detection device respectively; and

means for canceling rotation of the plurality of charged particle beams induced by a magnetic objective lens in the multi-beam apparatus.

2. The imaging system according to claim 1, further comprising means for canceling scanning of the plurality of charged particle beams on the detection device, which is induced by a deflection scanning unit in the multi-beam apparatus.

3. The imaging system according to claim 1, wherein the plurality of charged particle beams includes a plurality of slow secondary electron beams and a plurality of backscattered electron beams.

4. The imaging system according to claim 1, wherein the detection device is a semiconductor diode detector.

5. The imaging system according to claim 2, wherein the canceling-scanning means is located close to an entrance side of the imaging system.

6. The imaging system according to claim 2, wherein the canceling-scanning means includes a first deflector and a second deflector in sequence along an optical axis of the imaging system.

7. The imaging system according to claim 2, wherein the focusing means includes a zoom lens and a projecting lens in sequence along an optical axis of the imaging system.

8. The imaging system according to claim 7, wherein

the magnetic objective lens and the zoom lens focus the plurality of charged particle beams into a transfer plane; and

the projecting lens focuses the plurality of charged particle beams from the transfer plane into a detection plane on the detection device.

9. The imaging system according to claim 8, wherein the zoom lens includes a first electrostatic lens and a second electrostatic lens in sequence along the optical axis.

10. The imaging system according to claim 8, wherein the canceling-scanning means locates between the first electrostatic lens and a second electrostatic lens.

11. The imaging system according to claim 9, wherein the zoom lens includes a magnetic lens being said canceling-rotation means.

12. The imaging system according to claim 8, wherein the projecting lens includes an electrostatic lens and a magnetic lens being said canceling-rotation means.

13. The imaging system according to claim 8, further comprising a field lens at the transfer plane for reducing aberration of the plurality of charged particle beams.

14. The imaging system according to claim 13, wherein the field lens includes an electrostatic lens.

15. The imaging system according to claim 14, wherein the field lens includes a magnetic lens being said canceling-rotation means.

16. The imaging system according to claim 8, further comprising a plate with at least one opening, one opening of the plate being as a beam-limit aperture for reducing sizes of the plurality of charged particle beams on the detection device.

17. The imaging system according to claim 16, wherein the plate includes a plurality of selectable openings with different sizes.

18. The imaging system according to claim 16, wherein the plate locates at a crossover of the plurality of charged particle beams between the projecting lens and the detection device.

19. The imaging system according to claim 8, further comprising a stigmator for reducing astigmatism of the plurality of charged particle beams.

20. The imaging system according to claim 19, wherein the stigmator locates at a crossover of the plurality of charged particle beams.

21. The imaging system according to claim 8, further comprising an alignment deflector for aligning the plurality of charged particle beams with a plurality of detection elements of the detection device respectively.

22. The imaging system according to claim 21, wherein the alignment deflector locates between the detection device and the projecting lens.