Claims

1. A background reduction system comprising:
   a charged particle source configured to generate a charged-particle beam; and
   a louvered structure including one or more apertures configured to selectively transmit charged particles according to their angle of incidence;
   a charged-particle detector configured to receive charged particles selectively transmitted by the louvered structure.

2. The background reduction system of claim 1, wherein the angle of incidence is from about 10 degrees to about 50 degrees.

3. The background reduction system of claim 1, wherein the charged-particle beam is directed onto a target substrate.

4. The background reduction system of claim 1, wherein the louvered structure is configured for selectively transmitting secondary charged particles emitted from the target substrate.

5. The background reduction system of claim 1, wherein the louvered structure comprises a particle-absorbing composition.

6. The background reduction system of claim 1, wherein the particle-absorbing composition is a particle-absorbing coating of a base louvered substrate.

7. The background reduction system of claim 1, wherein the louvered structure includes a first portion including one or more apertures having a first angle of acceptance and a second portion including one or more apertures having a second angle of acceptance different than the first angle of acceptance.

8. The background reduction system of claim 1, wherein the charged-particle detector is a position-sensitive charged-particle detector.

9. The background reduction system of claim 1, wherein one or more apertures of the louvered structure are substantially linear in shape.

10. The background reduction system of claim 1, wherein one or more apertures of the louvered structure are at least partially arcuate in shape.

11. A method for background reduction comprising:
generating a charged-particle beam;
selectively transmitting one or more charged particles according to an angle of incidence of the one or more charged particles; and
detecting one or more selectively transmitted charged particles.

12. The method of claim 11, wherein the selectively transmitting one or more charged particles generated by the charged-particle beam according to an angle of incidence of the one or more charged particles comprises:
disposing a louvered structure in a path of the charged particles generated by the charged-particle beam.

13. The method of claim 12, wherein the louvered structure comprises:
one or more apertures configured to selectively transmit charged particles according to their angle of incidence.

14. The method of claim 13, wherein the angle of incidence is from about 10 degrees to about 50 degrees.

15. The method of claim 12, further comprising:
directing the charged-particle beam onto a target substrate.

16. The background reduction system of claim 15, wherein the selectively transmitting one or more charged particles generated by the charged-particle beam according to an angle of incidence of the one or more charged particles comprises:

selectively transmitting secondary charged particles emitted from the target substrate according to an angle of incidence of the one or more charged particles.

17. A system for background reduction comprising:
means for generating a charged-particle beam;
means for selectively transmitting one or more charged particles according to an angle of incidence of the one or more charged particles; and
means for detecting one or more selectively transmitted charged particles.

18. The system of claim 17 wherein the means for selectively transmitting one or more charged particles according to an angle of incidence of the one or more charged particles comprises:
a louvered structure.

19. The method of claim 18, wherein the louvered structure comprises:
one or more apertures configured to selectively transmit charged particles according to their angle of incidence.

20. The method of claim 19, wherein the angle of incidence is from about 10 degrees to about 50 degrees.

CLAIMS

1. A background reduction system comprising:

a charged particle source configured to generate a charged-particle beam; and

a louvered structure including one or more apertures configured to selectively transmit charged particles according to their angle of incidence;

a charged-particle detector configured to receive charged particles selectively transmitted by the louvered structure.

2. The background reduction system of claim **1**, wherein the angle of incidence is from about 10 degrees to about 50 degrees.

3. The background reduction system of claim **1**, wherein the charged-particle beam is directed onto a target substrate.

4. The background reduction system of claim **1**, wherein the louvered structure is configured for selectively transmitting secondary charged particles emitted from the target substrate.

5. The background reduction system of claim **1**, wherein the louvered structure comprises a particle-absorbing composition.

6. The background reduction system of claim **1**, wherein the particle-absorbing composition is a particle-absorbing coating of a base louvered substrate.

7. The background reduction system of claim **1**, wherein the louvered structure includes a first portion including one or more apertures having a first angle of acceptance and a second portion including one or more apertures having a second angle of acceptance different than the first angle of acceptance.

8. The background reduction system of claim **1**, wherein the charged-particle detector is a position-sensitive charged-particle detector.

9. The background reduction system of claim **1**, wherein one or more apertures of the louvered structure are substantially linear in shape.

10. The background reduction system of claim **1**, wherein one or more apertures of the louvered structure are at least partially arcuate in shape.

11. A method for background reduction comprising:

generating a charged-particle beam;

disposing a louvered structure in a path of one or more charged particles for selectively transmitting one or more charged particles according to an angle of incidence of the one or more charged particles; and

detecting one or more selectively transmitted charged particles.

12. The method of claim **11**, wherein the angle of incidence is from about 10 degrees to about 50 degrees.

13. The method of claim **11**, further comprising:

directing the charged-particle beam onto a target substrate.

14. The background reduction system method of claim **13**, wherein the disposing a louvered structure in a path of one or more charged particles for selectively transmitting one or more charged particles generated by the charged-particle beam according to an angle of incidence of the one or more charged particles comprises:

disposing a louvered structure in a path of one or more secondary charged particles emitted from the target substrate for selectively transmitting the one or more secondary charged particles emitted from the target substrate according to an angle of incidence of the one or more secondary charged particles.

15. A system for background reduction system comprising:

means for generating a charged-particle beam;

means for disposing a louvered structure in a path of one or more charged particles for selectively transmitting one or more charged particles according to an angle of incidence of the one or more charged particles; and

means for detecting one or more selectively transmitted charged particles.

16. The method system of claim **15**, wherein the angle of incidence is from about 10 degrees to about 50 degrees.