CLAIMS

1. A system for tilt calculation based on overlay metrology measurements, comprising:

a controller communicatively coupled to one or more metrology tools configured to hold a metrology sample, wherein the controller includes one or more processors configured to execute program instructions causing the one or more processors to:

receive one or more overlay metrology measurements of one or more metrology targets of the metrology sample from the one or more metrology tools, wherein the one or more overlay metrology measurements are taken following an after develop inspection (ADI) process;

determine tilt from the one or more overlay metrology measurements;

predict tilt with a simulator based on at least the determined tilt; and

determine one or more correctables for at least one of one or more lithography tools or the one or more metrology tools to adjust for the predicted tilt, wherein the one or more correctables are configured to reduce an amount of tilt in the sample or overlay inaccuracy of the one or more overlay metrology measurements.

2. The system of Claim 1, wherein the one or more correctables are provided to the one or more lithography tools as one or more control signals.

3. The system of Claim 2, wherein the one or more lithography tools is adjusted based on the one or more correctables to reduce the amount of tilt caused by an N+1 etch step of the sample.

4. The system of Claim 2, wherein the one or more lithography tools is adjusted based on the one or more correctables to reduce the amount of tilt caused by an N-1 etch step of the sample.

5. The system of Claim 1, wherein the one or more correctables are provided to the one or more metrology tools as one or more control signals.

6. The system of Claim 5, wherein the one or more metrology tools is adjusted based on the one or more correctables to reduce the overlay inaccuracy in the one or more overlay metrology measurements.

7. The system of Claim 1, wherein the one or more lithography tools include an etcher.

8. The system of Claim 1, wherein the one or more metrology tools include at least one of an electron-beam metrology tool or an optical metrology tool.

9. A system for error reduction in metrology measurements, comprising:

one or more metrology tools configured to hold a metrology sample; and

a controller communicatively coupled to the one or more metrology tools, wherein the controller includes one or more processors configured to execute program instructions causing the one or more processors to:

receive one or more overlay metrology measurements of one or more metrology targets of the metrology sample from the one or more metrology tools, wherein the one or more overlay metrology measurements are taken following an after develop inspection (ADI) process;

determine tilt from the one or more overlay metrology measurements;

predict tilt with a simulator based on at least the determined tilt; and

determine one or more correctables for at least one of one or more lithography tools or the one or more metrology tools to adjust for the predicted tilt, wherein the one or more correctables are configured to reduce an amount of tilt in the sample or overlay inaccuracy of the one or more overlay metrology measurements.

10. The system of Claim 9, wherein the one or more correctables are provided to the one or more lithography tools as one or more control signals.

11. The system of Claim 10, wherein the one or more lithography tools is adjusted based on the one or more correctables to reduce the amount of tilt caused by an N+1 etch step of the sample.

12. The system of Claim 10, wherein the one or more lithography tools is adjusted based on the one or more correctables to reduce the amount of tilt caused by an N-1 etch step of the sample.

13. The system of Claim 9, wherein the one or more correctables are provided to the one or more metrology tools as one or more control signals.

14. The system of Claim 13, wherein the one or more metrology tools are adjusted based on the one or more correctables to reduce the overlay inaccuracy in the one or more overlay metrology measurements.

15. The system of Claim 9, wherein the one or more lithography tools include an etcher.

16. The system of Claim 9, wherein the one or more metrology tools include at least one of an electron-beam metrology tool or an optical metrology tool.

17. A method comprising:

receiving one or more overlay metrology measurements of one or more metrology targets of a metrology sample from one or more metrology tools, wherein the one or more overlay metrology measurements are taken following an after develop inspection (ADI) process;

determining tilt from the one or more overlay metrology measurements;

predicting tilt with a simulator based on at least the determined tilt; and

determining one or more correctables for at least one of one or more lithography tools or the one or more metrology tools to adjust for the predicted tilt, wherein the one or more correctables are configured to reduce an amount of tilt in the sample or overlay inaccuracy of the one or more overlay metrology measurements.

18. The method of Claim 17, wherein the one or more correctables are provided to the one or more lithography tools as one or more control signals.

19. The method of Claim 18, wherein the one or more lithography tools is adjusted based on the one or more correctables to reduce the amount of tilt caused by an N+1 etch step of the sample.

20. The method of Claim 18, wherein the one or more lithography tools is adjusted based on the one or more correctables to reduce the amount of tilt caused by an N-1 etch step of the sample.

21. The method of Claim 17, wherein the one or more correctables are provided to the one or more metrology tools as one or more control signals.

22. The method of Claim 21, wherein the one or more metrology tools are adjusted based on the one or more correctables to reduce the overlay inaccuracy in the one or more overlay metrology measurements.

23. The method of Claim 17, wherein the one or more lithography tools include an etcher.

24. The method of Claim 17, wherein the one or more metrology tools include at least one of an electron-beam metrology tool or an optical metrology tool.