CLAIMS

1. A system comprising:

a memory storing instructions to facilitate an etch recipe development process; and

at least one processing device operatively coupled to the memory, wherein the instructions, upon execution by the at least one processing device, cause the at least one processing device to facilitate the etch recipe development process by performing operations comprising:

obtaining, from an optical detector, first material thickness data for a first material and second material thickness data for a second material resulting from an iteration of an etch process using an etch recipe, wherein the first material is located at a first reflectometry measurement point and the second material is located at a second reflectometry measurement point different from the first reflectometry measurement point, wherein the first reflectometry measurement point corresponds to a first collection cylinder associated with a first collimator located above the first reflectometry measurement point, and wherein the second reflectometry measurement point corresponds to a second collection cylinder associated with a second collimator located above the second reflectometry measurement point; and

determining one or more etch parameters based on at least the first material thickness data and the second material thickness data.

2. The system of claim 1, wherein the first material and the second material are each disposed on a respective coupon on a carrier wafer.

3. The system of claim 1, wherein the operations further comprise enabling the optical detector to selectively measure the first material thickness data and the second material thickness data.

4. The system of claim 1, wherein the one or more etch parameters comprise at least one of: etch selectivity or etch rate.

5. The system of claim 1, wherein the operations further comprise:

determining whether the one or more etch parameters fail to meet an etch parameter goal;

obtaining a modified etch recipe in response to determining that the one or more etch parameters fail to meet the etch parameter goal; and

initiating a second iteration of the etch process using the modified etch recipe.

6. The system of claim 5, wherein obtaining the modified etch recipe further comprises automatically modifying one or more etch recipe conditions of the etch recipe.

7. The system of claim 6, wherein the one or more etch recipe conditions comprise at least one of: gas type, gas concentration, pressure, RF power, or RF pulsing.

8. The system of claim 1, wherein the operations further comprise:

determining whether the one or more etch parameters meet an etch parameter goal; and

terminating the etch recipe development process in response to determining that the one or more etch parameters meet the etch parameter goal.

9. A method comprising:

obtaining, by at least one processing device from an optical detector, first material thickness data for a first material and second material thickness data for a second material resulting from an iteration of an etch process using an etch recipe, wherein the first material is located at a first reflectometry measurement point and the second material is located at a second reflectometry measurement point different from the first reflectometry measurement point, wherein the first reflectometry measurement point corresponds to a first collection cylinder associated with a first collimator located above the first reflectometry measurement point, and wherein the second reflectometry measurement point corresponds to a second collection cylinder associated with a second collimator located above the second reflectometry measurement point; and

determining, by the at least one processing device, one or more etch parameters based on at least the first material thickness data and the second material thickness data.

10. The method of claim 9, wherein the first material and the second material are each disposed on a respective coupon on a carrier wafer.

11. The method of claim 9, wherein the one or more etch parameters comprise at least one of: etch selectivity or etch rate.

12. The method of claim 9, further comprising:

determining, by the at least one processing device, whether the one or more etch parameters fail to meet an etch parameter goal;

obtaining, by the at least one processing device, a modified etch recipe in response to determining that the one or more etch parameters fail to meet the etch parameter goal; and

initiating, by the at least one processing device, a second iteration of the etch process using the modified etch recipe.

13. The method of claim 12, wherein obtaining the modified etch recipe further comprises automatically modifying one or more etch recipe conditions of the etch recipe.

14. The method of claim 9, further comprising:

determining, by the at least one processing device, whether the one or more etch parameters meet an etch parameter goal; and

terminating, by the at least one processing device, an etch recipe development process in response to determining that the one or more etch parameters meet the etch parameter goal.

15. A system comprising:

an optical detector, operatively coupled to a switch device, to selectively measure material thickness data resulting from an iteration of an etch process;

a memory storing instructions to facilitate an etch recipe development process; and

at least one processing device operatively coupled to the memory, the optical detector and the switch device, wherein the instructions, upon execution by the at least one processing device, cause the at least one processing device to facilitate the etch recipe development process by determining one or more etch parameters based on at least first material thickness data for a first material and second material thickness data for a second material, wherein the first material is located at a first reflectometry measurement point and the second material is

located at a second reflectometry measurement point different from the first reflectometry measurement point, wherein the first reflectometry measurement point corresponds to a first collection cylinder associated with a first collimator located above the first reflectometry measurement point, and wherein the second reflectometry measurement point corresponds to a second collection cylinder associated with a second collimator located above the second reflectometry measurement point.

16. The system of claim 15, wherein the first material and the second material are each disposed on a respective coupon on a carrier wafer.

17. The system of claim 15, wherein the one or more etch parameters comprise at least one of: etch selectivity or etch rate.