CLAIMS

What is claimed is:

1. An apparatus for washing and drying a carrier, the apparatus comprising:

a chamber capable of holding a carrier;

said chamber comprising a carrier-exterior spray system and a carrier-interior spray system internal to said chamber;

said carrier-exterior spray system comprising at least one slot which sprays a fluid onto an exterior surface of the carrier; and

said interior spray system comprising at least one slot which sprays the fluid into an interior of the carrier.

2. The apparatus of claim 1 wherein the carrier comprises a semi-conductor wafer carrier.

3. The apparatus of claim 1 wherein the carrier comprises a carrier lid.

4. The apparatus of claim 1 wherein said fluid comprises a liquid.

5. The apparatus of claim 1 wherein said fluid comprises a gas.

6. The apparatus of claim 1 wherein said spray systems move perpendicular to each other to prevent carrier movement.

7. The apparatus of claim 1 wherein said spray systems oscillate in a sweeping motion.

8. The apparatus of claim 1 further comprising a motor for rotating the carrier.

9. The apparatus of claim 1 further comprising at least one heating system.

10. The apparatus of claim 9 wherein the heating system comprises at least one heating pad.

11. The apparatus of claim 1 wherein said apparatus is disposed within a mini clean environment.

12. The apparatus of claim 1 wherein a plurality of apparatuses are disposed within a cabinet.

13. The apparatus of claim 1 wherein said carrier-exterior spray system it at least partially rotatable.

14. The apparatus of claim 1 wherein said carrier-interior spray system is at least partially rotatable.

15. A method of washing and drying a carrier, the method comprising:

disposing a carrier into a chamber;.

spraying a liquid on an exterior of the carrier with an exterior spray system;

spraying a liquid on an interior of the carrier with an interior spray system;

spraying a gas on an exterior of the carrier with the exterior spray system; and

spraying a gas on an interior of a carrier with the interior spray system.

16. The method of claim 15 wherein disposing a carrier comprises disposing a semi-conductor wafer carrier.

17. The method of claim 15 wherein disposing a carrier comprises disposing a carrier lid.

18. The method of claim 15 further comprising heating an exterior of the chamber.

19. The method of claim 15 wherein the exterior and interior of the carrier are sprayed in a perpendicular motion to one another.

20. The method of claim 15 wherein at least one of the spraying steps comprises spraying in a sweeping motion.

21. The apparatus of claim 1 further wherein said chamber comprises walls and at least one heating system which heats one or more walls.

22. The apparatus of claim 1 further comprising a vent valve.

23. The apparatus of claim 22 wherein said vent valve is a butterfly valve.

24. The apparatus of claim 1 wherein said carrier-exterior spray system comprises a spray bar, manifold and air and water inlets.

25. The apparatus of claim 24 wherein said carrier-exterior spray system further comprises a pulley drive.

CLAIMS

What is claimed is:

1. An apparatus for washing and drying a carrier, the apparatus comprising:

a chamber comprising walls; said chamber capable of holding a semi-conductor wafer carrier;

said chamber comprising a carrier-exterior spray system and a carrier-interior spray system internal to said chamber;

said carrier-exterior spray system comprising at least one slot which sprays a fluid onto an exterior surface of the carrier; and

said interior spray system comprising at least one slot which sprays the fluid into an interior of the carrier;

said apparatus further comprises at least one heating system which heats one or more walls of said chamber, said at least one heating system comprising at least one heating blanket, heating pad, or heating element within said one or more walls of the chamber or on said one or more walls exterior to said chamber.

2. The apparatus of claim 1 wherein the carrier comprises a carrier lid.

3. The apparatus of claim 1 wherein said fluid comprises a liquid.

4. The apparatus of claim 1 wherein said fluid comprises a gas.

5. The apparatus of claim 1 wherein said spray systems move perpendicular to each other to prevent carrier movement.

6. The apparatus of claim 1 wherein said spray systems oscillate in a sweeping motion.

7. The apparatus of claim 1 further comprising a motor for rotating the carrier.

8. The apparatus of claim 1 wherein the heating system comprises at least one heating pad.

9. The apparatus of claim 1 wherein said apparatus is disposed within a mini clean environment.

10. The apparatus of claim 1 wherein a plurality of apparatuses are disposed within a cabinet.

11. The apparatus of claim 1 wherein said carrier-exterior spray system it at least partially rotatable.

12. The apparatus of claim 1 wherein said carrier-interior spray system is at least partially rotatable.

13. A method of washing and drying a carrier, the method comprising:

disposing a carrier into a chamber; said chamber comprising walls;

spraying a liquid on an exterior of the carrier with an exterior spray system;

spraying a liquid on an interior of the carrier with an interior spray system;

spraying a gas on an exterior of the carrier with the exterior spray system;

spraying a gas on an interior of a carrier with the interior spray system; and

heating said chamber by at least one heating system which heats one or more walls of said chamber wherein said at least one heating system comprises at least one heating blanket, heating pad, or heating element within said one or more walls of the chamber or on said one or more walls exterior to said chamber

disposing a carrier comprises disposing a semi-conductor wafer carrier.

14. The method of claim 13 wherein disposing a carrier comprises disposing a carrier lid.

15. The method of claim 13 further comprising heating an exterior of the chamber.

16. The method of claim 13 wherein the exterior and interior of the carrier are sprayed in a perpendicular motion to one another.

17. The method of claim 13 wherein at least one of the spraying steps comprises spraying in a sweeping motion.