

CLAIMS

1. A substrate cleaning apparatus, comprising:

5 a substrate holder configured to hold a substrate horizontally and rotate the substrate;

a cylindrical scrub-cleaning tool configured to come into sliding contact with a surface of the substrate;

a rotating device configured to rotate the scrub-cleaning tool about its own axis; and

10 a self-cleaning device configured to clean the scrub-cleaning tool, the self-cleaning device including

a cleaning body having an inner circumferential surface that is shaped along an circumferential surface of the scrub-cleaning tool,

15 at least one cleaning nozzle configured to eject a cleaning fluid toward the circumferential surface of the scrub-cleaning tool through a gap between the circumferential surface of the scrub-cleaning tool and the inner circumferential surface of the cleaning body, and

20 a blow nozzle configured to eject a gas toward the circumferential surface of the scrub-cleaning tool through the gap, the blow nozzle being disposed downstream of the cleaning nozzle with respect to a rotational direction of the scrub-cleaning tool.

2. A substrate cleaning apparatus, comprising:

25 a substrate holder configured to hold a substrate horizontally and rotate the substrate;

a cylindrical scrub-cleaning tool configured to come into sliding contact with a surface of the substrate;

a rotating device configured to rotate the scrub-cleaning tool about its own axis;
and

a self-cleaning device configured to clean the scrub-cleaning tool,
the self-cleaning device including

5 a cleaning body having an inner circumferential surface that is shaped
along an circumferential surface of the scrub-cleaning tool,

at least one cleaning nozzle configured to eject a cleaning fluid toward
the circumferential surface of the scrub-cleaning tool through a gap between the
circumferential surface of the scrub-cleaning tool and the inner circumferential surface of
10 the cleaning body, and

a suction passage for sucking a gas from the gap.

3. A substrate cleaning apparatus, comprising:

a substrate holder configured to hold a substrate horizontally and rotate the
15 substrate;

a cylindrical scrub-cleaning tool configured to come into sliding contact with a
surface of the substrate;

a rotating device configured to rotate the scrub-cleaning tool about its own axis;
and

20 a self-cleaning device configured to clean the scrub-cleaning tool,
the self-cleaning device including

a cleaning body having an inner circumferential surface that is shaped
along an circumferential surface of the scrub-cleaning tool, and

at least one cleaning nozzle configured to eject a cleaning fluid toward
25 the circumferential surface of the scrub-cleaning tool through a gap between the
circumferential surface of the scrub-cleaning tool and the inner circumferential surface of
the cleaning body,

wherein the at least one cleaning nozzle comprises a first cleaning nozzle and a second cleaning nozzle disposed at both sides of the scrub-cleaning tool, a third cleaning nozzle disposed below the first cleaning nozzle, and a fourth cleaning nozzle disposed below the second cleaning nozzle.

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4. The substrate cleaning apparatus according to claim 1 or 2, wherein the at least one cleaning nozzle comprises a first cleaning nozzle and a second cleaning nozzle disposed at both sides of the scrub-cleaning tool.

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5. The substrate cleaning apparatus according to any one of claims 1 to 4, wherein the cleaning nozzle comprises a plurality of slit nozzles arranged along a central axis of the scrub-cleaning tool.

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6. The substrate cleaning apparatus according to any one of claims 1 to 5, wherein the cleaning nozzle is inclined downwardly.

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7. The substrate cleaning apparatus according to any one of claims 1 to 6, wherein the cleaning fluid comprises a mixture of a cleaning liquid and a high-pressure gas.

8. The substrate cleaning apparatus according to any one of claims 1 to 6, wherein the cleaning fluid comprises a high-pressure cleaning liquid.

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9. The substrate cleaning apparatus according to any one of claims 1 to 8, wherein the self-cleaning device further includes a drain having a fluid inlet lying in the inner circumferential surface of the cleaning body.

10. The substrate cleaning apparatus according to any one of claims 1 to 9, wherein the scrub-cleaning tool is disposed so as to come into sliding contact with a lower surface of the substrate, and the self-cleaning device is disposed below the scrub-cleaning tool.

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11. The substrate cleaning apparatus according to any one of claims 1 to 9, further comprising:

a transporting mechanism configured to transport the scrub-cleaning tool to the self-cleaning device,

10 the scrub-cleaning tool being disposed so as to come into sliding contact with an upper surface of the substrate, and

the self-cleaning device being disposed adjacent to the substrate holder.