Claims:

1. A device for removing liquid from a surface of a disc-like article, comprising:

a spin chuck for holding and rotating a single disc-like article about an axis of rotation;

a liquid dispenser for dispensing liquid onto the disc-like article;

a first gas dispenser comprising at least one nozzle with at least one orifice for blowing gas onto the disc-like article;

a second gas dispenser comprising at least one nozzle with at least one orifice for blowing gas onto the disc-like article; and

a rotary arm for moving the liquid dispenser and the second gas dispenser across the disc-like article along a circular arc so that the second gas dispenser and the liquid dispenser move to a point in a peripheral region of the spin chuck,

wherein the at least one nozzle of the second gas dispenser is elongated along a first horizontal line, the first horizontal line defining an angle α of 8-15° relative to a second horizontal line connecting the center of the second gas dispenser and the rotation axis of the rotary arm,

wherein an outlet orifice of the liquid dispenser and the at least one orifice of the first gas dispenser are aligned along a third horizontal line, and

wherein the first horizontal line forms an oblique angle with the third horizontal line.

2. The device according to claim 1, wherein the angle α is in a range from θ/2 - 3° to θ/2 + 3°, wherein θ is a range of angular movement of the rotary arm from a center of the spin chuck to a periphery of the spin chuck and θ is 16° to 34°.

3. The device according to claim 1, wherein the third horizontal line is perpendicular to the second horizontal line.

4. The device according to claim 1, wherein the liquid dispenser, the first gas dispenser and the second gas dispenser are integrated into a multi-nozzle head mounted at a distal end of the rotary arm.

5. The device according to claim 1, wherein a sum of cross-sectional areas of the at least one orifice of the first

gas dispenser is smaller than a sum of cross-sectional areas of the at least one orifice of the second gas dispenser.

6. The device according to claim 1, wherein the liquid dispenser and the second gas dispenser are positioned on the rotary arm so that the second gas dispenser follows the liquid dispenser as the liquid dispenser and the second gas dispenser are moved across the disc-like article.

7. The device according to claim 1, wherein the liquid dispenser and the first gas dispenser are positioned on the rotary arm so that the first gas dispenser follows the liquid dispenser as the liquid dispenser and the first gas dispenser are moved across the disc-like article.

8. The device according to claim 1, wherein the at least one orifice of the second gas dispenser is slit-shaped and elongated along the first horizontal line.

9. The device according to claim 1, wherein the at least one orifice of the second gas dispenser comprises two slit-shaped orifices, each of which is elongated along the first horizontal line.

10. The device according to claim 9, wherein the two slit-shaped orifices have centers aligned along the first horizontal line.

11. The device according to claim 1, wherein the at least one orifice of the second gas dispenser comprises two circular orifices having centers aligned along the first horizontal line.

12. The device according to claim 1, wherein the rotary arm is configured to rotate about a vertical axis parallel to and offset from the axis of rotation of the spin chuck, so as to move the second gas dispenser along an arcuate path from the axis of rotation of the spin chuck to the point, and wherein, when the second gas dispenser is positioned at the point, the first horizontal line is perpendicular to the radius of a circle centered on the axis of rotation of the spin chuck that passes through the point.

13. The device according to claim 1, wherein the first horizontal line forms an angle with a radius of rotation of the spin chuck that changes continuously as the second gas dispenser is moved across the spin chuck.

14. A method for removing liquid from a surface of a disc-like article, comprising:

rotating the disc-like article about an axis perpendicular to the disc-like article's main surface;

supplying liquid onto the disc-like article when rotated, wherein the liquid is supplied from a supply port, which is moved across the disc-like article along a circular arc by a rotary arm beginning at or before a center and extending to a point in an edge region of the disc-like article;

supplying a first gas flow through a first gas supply port onto the disc-like article; and

supplying a second gas flow through a second gas supply port of a second gas dispenser onto the disc-like article when rotated,

wherein the second gas flow is supplied from the second gas supply port that is elongated along a first horizontal line, the first horizontal line defining an angle α of 8-15° with a second horizontal line connecting the center of the second gas dispenser and the rotation axis of the rotary arm,

wherein the supply port and the first gas supply port are aligned along a third horizontal line, and

wherein the first horizontal line forms an oblique angle with the third horizontal line.

15. The method according to claim 14, wherein said supplying of the second gas flow starts after the first gas flow has started.

16. The method according to claim 146, wherein the second gas flow is started when an outer edge of the second gas supply port is at a distance to the center of the rotational movement of at least 20 mm.

17. The method according to claim 14, wherein the gas velocity of the first gas flow is minimum 3 m/s.

18. The method according to claim 14, wherein a substance decreasing the surface tension of a removing liquid is applied either through the removing liquid or through at least the second gas flow or through both the removing liquid and at least the second gas flow.

19. A device for removing liquid from a surface of a disc-like article, comprising:

a spin chuck for holding and rotating a single disc-like article about an axis of rotation;

a liquid dispenser for dispensing liquid onto the disc-like article;

a first gas dispenser comprising at least one nozzle with at least one orifice for blowing gas onto the disc-like article;

a second gas dispenser comprising at least one nozzle with at least one orifice for blowing gas onto the disc-like article; and

a rotary arm for moving the liquid dispenser and the second gas dispenser across the disc-like article along a circular arc so that the second gas dispenser and the liquid dispenser move to a point in a peripheral region of the spin chuck,

wherein the at least one nozzle of the second gas dispenser is elongated along a first horizontal line, the first horizontal line defining an angle α of 8-15° relative to a second horizontal line connecting the center of the second gas dispenser and the rotation axis of the rotary arm,

wherein the liquid dispenser, the first gas dispenser and the second gas dispenser are coupled at a distal end of the rotary arm.