What is claimed is:

1. A washing device comprising:

an arm;

a two-fluid jet nozzle which is supported on the leading end of the arm and moving toward the outer circumference from the center of a substrate by the rotation of the arm, to supply a jet flow, which is generated by mixing ultrapure water(D1W) with gas, onto the substrate; and

an on-arm spray nozzle which is provided in the arm to supply a chemical liquid, which has conductivity, to the upper surface of the substrate in the vicinity of the two-fluid jet nozzle;

wherein the chemical liquid is supplied to the vicinity of the washing location at which the jet flow collides with the substrate surface.

2. The washing device according to claim 1,

wherein the liquid-landing area by the on-arm spray nozzle is disposed in an area up to 180° rotation in the forward direction of a rotation direction of the substrate from the washing location by the jet flow of the two-fluid jet nozzle.

3. The washing device according to claim 1, wherein the two-fluid jet nozzle is supported at the leading end portion of the arm and the spray nozzle is provided in the vicinity of the two-fluid jet nozzle, and the arm is rotatably attached to a column at the other leading end portion of the arm.

4. A washing device comprising:

a substrate rotation mechanism configured to hold a substrate and rotate the substrate about a central axis of the

substrate as a rotary axis;

a first single tube nozzle configured to discharge a first washing liquid toward an upper surface of the substrate held by the substrate rotation mechanism; and

a spray nozzle configured to spray a second washing liquid toward the upper surface of the substrate held by the substrate rotation mechanism,

wherein a liquid-landing position of the first washing liquid is located in an area up to a 180° rotation in a reverse direction of a rotational direction of the substrate from a liquid-landing position of the second washing liquid.

5. A washing method comprising:

rotating a substrate about a central axis of the substrate as a rotary axis; and

discharging a first washing liquid toward an upper surface of the substrate, the first washing liquid being landed in front of the center of the substrate, and a liquid flow on the upper surface of the substrate after landing being passed through the center of the substrate,

wherein a liquid-landing position of the first washing liquid is located in an area up to a 180° rotation in a reverse direction of a rotational direction of the substrate from a liquid-landing position of the second washing liquid.