WHAT IS CLAIMED IS:

1. A method for cleaning an in-process wafer, comprising:

causing the in-process wafer to be rotated;

causing function water to be applied to a surface of the rotated in-process wafer to generate a flowing function water film on the rotated in-process wafer;

causing the surface of the in-process wafer to be cleaned by a sonic device for a first period, a rotation speed of the in-process wafer at the first period being between 10 rpm and 50 rpm;

causing the sonic device to be lifted and/or rotation speed of the rotated in-process wafer to be accelerated to separate the sonic device from the flowing function water film;

after separating the sonic device from the function water film, causing the function water comprising matter for increasing zeta potential of particles to be applied to the surface of the rotated in-process wafer for a second period, a rotation speed of the in-process wafer at the second period being between 300 rpm and 1000 rpm; and

causing the surface of the in-process wafer to be dried.

2. The method of claim 1, wherein causing the rotation speed of the rotated in-process wafer to be accelerated comprises causing the rotation speed of the rotated in-process wafer to be increased from below 50 rpm to greater than 300 rpm.

3. The method of claim 1, wherein the function water includes at least one of FWN2, FWH_2, FWO_2, ozonated deionized water (DIO3), FOM, SC1, DSP and TMAH.

4. The method of claim 1, wherein the first period is greater than 20 seconds, and the second period is greater than 2 seconds.

5. The method of claim 4, wherein the first period is greater than 30 seconds, and the second period is greater than 4 seconds.

6. The method of claim 1, wherein causing the surface of the in-process wafer to be dried comprises:

causing the surface of the in-process wafer to be blown with non-reactive gas while

rotating the in-process wafer at a second speed.

7. The method of claim 6, wherein the non-reactive gas includes at least one of N_2, isopropyl alcohol (IPA), and inertia gas, and wherein the second speed is greater than 1000rpm.

8. The method of claim 1, wherein the sonic device is configured to operate with a power between 10W and 100W, and the sonic device includes a resonator forming a gap between the resonator and the surface of the rotated in-process wafer.

9. The method of claim 8, wherein the sonic device is configured to operate with a power between 20W and 50W, and the gap is variable.

10. The method of claim 1, wherein the function water is applied at a flowing speed between 1 lpm and 3 lpm during the first and second periods.

11. The method of claim 11, wherein the function water is applied at a flowing speed between 1.2 lpm and 2 lpm during the first and second periods.

~~12. The method of claim 1, wherein the rotated in-process wafer is rotated at a first speed between 10 rpm and 50 rpm during the first period, and the rotated in-process wafer is rotated at a third speed between 300 rpm and 1000 rpm during the second period.~~

~~13~~12. The method of claim ~~12~~1, wherein the rotated in-process wafer is rotated at the first speed between 25 rpm and 35 rpm during the first period, and the rotated in-process wafer is rotated at the third speed between 500 rpm and 700 rpm during the second period.

13~~14~~. The method of claim 1, further comprising:

causing deionized water to be applied to the surface of the rotated in-process wafer for a third period prior to applying the function water to the surface of the rotated in-process wafer; and

causing the deionized water to be applied to the surface of the rotated in-process wafer for a fourth period subsequent to the second period.

~~15~~14. The method of claim 13~~14~~, wherein the third period is greater than 4 seconds, and the fourth period is greater than 10 seconds.

~~16~~15. The method of claim 1, further comprising:

causing air to be supplied at a speed between 0.2m/s and 0.8m/s; and

causing air to be exhausted to set chamber exhaust pressure (EXH) between 70 pa and 400 pa.

~~17~~16. The method of claim 1, further comprising:

causing deionized water to be applied to the surface of the rotated in-process wafer for a third period;

causing dilute hydrofluoric (DHF) to be applied to the surface of the rotated in-process wafer for a fifth period to etch oxide on the surface of the rotated in-process wafer prior to applying the function water; and

causing the function water to be applied to the surface of the rotated in-process wafer for a further third period prior to applying the sonic device.

~~18~~17. The method of claim 1, further comprising:

causing deionized water to be applied to the surface of the rotated in-process wafer for a third period;

causing dilute hydrofluoric (DHF) to be applied to the surface of the rotated in-process wafer for a fifth period to etch oxide on the surface of the rotated in-process wafer prior to applying the function water;

causing DIO3 to be applied to the surface of the rotated in-process wafer for a sixth period to rinse the surface of the rotated in-process wafer; and

causing the function water to be applied to the surface of the rotated in-process wafer for a further third period prior to applying the sonic device.

18~~19~~. A cleaning apparatus, comprising:

a chuck holding an in-process wafer;

a rotating device operable to rotate the chuck;

a sonic device operable to clean a surface of the in-process wafer;

at least one fluid providing device operable to provide at least one of deionized water,

function water and drying gas to the surface of the in-process wafer; and

a control device operable to control the chuck, the rotating device, the sonic device and the at least one fluid providing device to perform the method of any of claims 1-17~~18~~.

19~~20~~. A computer-readable storage medium, comprising instructions for causing a cleaning apparatus to perform the method of any of claims 1-17~~18~~.