CLAIMS:

1. A plating apparatus, comprising multiple electrodes, the multiple electrodes including a main electrode and at least two second electrodes, the main electrode and the at least two second electrodes respectively generating an electric field in a corresponding area on the surface of a wafer, the main electrode and the at least two second electrodes respectively having a control interface, by selecting the combination of the control relationship between each second electrode and the main electrode, wafers with different sizes or different notch shapes are plated, and the control relationship is independent control or joint control, wherein each second electrode is corresponding to a notch area of the wafer, and the distance between the center of the main electrode and the second electrode corresponding to the notch of a wafer with a larger size is a longer distance, the distance between the center of the main electrode and the second electrode corresponding to the notch of a wafer with a smaller size is a shorter distance, the longer distance is larger than the shorter distance.

2. The plating apparatus as claimed in claim 1, wherein the control interfaces are power interfaces, the main electrode is connected to a main power supply, and each second electrode is selectively connected to a second power supply or the main power supply.

3. The plating apparatus as claimed in claim 1, wherein when the second electrode and the main electrode are controlled independently, the electric field intensity generated by the second electrode in the corresponding area is different from the electric field intensity generated by the main electrode in the corresponding area, when

the second electrode and the main electrode are controlled jointly, the electric field intensity generated by the second electrode in the corresponding area is the same with the electric field intensity generated by the main electrode in the corresponding area.

4. The plating apparatus as claimed in claim 1, wherein the main electrode is corresponding to the central area of the wafer, and the electric field generated by each second electrode doesn't overlap with each other.

5. The plating apparatus as claimed in claim 1, wherein the number of the second electrodes is two, and the angle between the axis of one second electrode and the axis of the other second electrode is 180^{o} .

6. The plating apparatus as claimed in claim 1, wherein each second electrode is set in a first bounding wall and the first bounding wall is used to separate the electric field generated by the second electrode with the electric field generated by the main electrode.

7. The plating apparatus as claimed in claim 6, further comprising an ionic membrane set on an ionic membrane frame, wherein the ionic membrane is used to separate a cathode area from an anode area in a plating chamber, and the end of the first bounding wall is connected to the ionic membrane.

8. The plating apparatus as claimed in claim 7, further comprising a diffusion plate with a perforations-area matching with the size of the wafer to be plated being set between the ionic membrane and the wafer, multiple perforations being set in the perforations-area, a second bounding wall being set between the ionic membrane and the diffusion plate, the two ends of the second bounding wall being respectively

connected to the ionic membrane frame and the diffusion plate, the shape and location of the second bounding wall matching with the shape and location of the first bounding wall.

9. The plating apparatus as claimed in claim 8, wherein the diffusion plate is assembled detachably.

10. The plating apparatus as claimed in claim 7, further comprising a main diffusion plate with a main perforations-area being set between the ionic membrane and the wafer, at least one notch area being set in the main perforations-area, the shape and location of the at least one notch area matching with at least one second electrode, a second bounding wall being set on the ionic membrane frame, the shape and location of the second bounding wall matching with the shape and location of the first bounding wall, a second diffusion plate with a second perforations-area being set on an end of the second bounding wall, multiple perforations being respectively set in the main perforations-area and the second perforations-area, after the main diffusion plate is mounted, the second diffusion plate is correspondingly mounted at the notch area of the main diffusion plate, and the main perforations-area of the main diffusion plate and the second perforations-area of the second diffusion plate join together to form a complete circle.

11. The plating apparatus as claimed in claim 10, wherein the main diffusion plate and the second diffusion plate are mounted detachably.

12. The plating apparatus as claimed in any one of claim 8 to claim 11, further comprising a baffle plate being detachably mounted between the diffusion plate and

the wafer, the baffle plate being employed to cover the periphery annular region of the perforations-area in order to fit for the plating of wafers with different sizes.

13. The plating apparatus as claimed in claim 10, wherein the density of the perforations in the second perforations-area is smaller than the density of the perforations in the main perforations-area, and/or the diameter of the perforations in the second perforations-area is smaller than the diameter of the perforations in the main perforations-area.

14. A plating method, comprising:

plating on the surface of a wafer with a plating apparatus having electrodes, wherein the electrodes include a main electrode and at least two second electrodes;

controlling the main electrode and the at least two second electrodes to generate an electric field in the corresponding area on the surface of the wafer, each second electrode and the main electrode being controlled independently or controlled jointly, by changing the combination of the control relationship between each second electrode and the main electrode, wafers with different sizes or different notch shapes being plated, wherein each second electrode is corresponding to a notch area of the wafer, and the distance between the center of the main electrode and the second electrode corresponding to the notch of a wafer with a larger size is a longer distance, the distance between the center of the main electrode and the second electrode corresponding to the notch of a wafer with a smaller size is a shorter distance, the longer distance is larger than the shorter distance.

15. The plating method as claimed in claim 14, further comprising connecting the

main electrode to a main power supply and selectively connecting each second electrode to a second power supply or the main power supply so that the independent control or joint control between each second electrode and the main electrode is realized.

16. The plating method as claimed in claim 14, wherein when the second electrode and the main electrode are controlled independently, the electric field intensity generated by the second electrode in the corresponding area is different from the electric field intensity generated by the main electrode in the corresponding area, when the second electrode and the main electrode are controlled jointly, the electric field intensity generated by the second electrode in the corresponding area is the same with the electric field intensity generated by the main electrode in the corresponding area.

17. The plating method as claimed in claim 14, further comprising connecting the main electrode to a main rectifier and selectively connecting the second electrode to the main rectifier or a second rectifier so that the independent control or joint control between each second electrode and the main electrode is realized.