

CLAIMS

WHAT IS CLAIMED IS:

1. An electrostatic chuck, comprising an insulation layer and a heating body arranged at a bottom of the insulation layer, and further comprising:

a cooling pipeline, arranged under the heating body, spaced apart from the heating body, and configured to transfer cooling liquid; and

a thin-wall structure, respectively connected to the heating body and the cooling pipeline, and configured to transfer heat from the heating body to the cooling pipeline;-

wherein

~~2. The electrostatic chuck according to claim 1, wherein the thin-wall structure includes a heat transfer plate that is thin-wall shaped;-~~

~~3. The electrostatic chuck according to claim 2, wherein:~~

the thin-wall structure further includes a ring-shaped connector, ~~wherein the ring-shaped connector~~ which is connected to a bottom of the heating body and arranged around circumference of the cooling pipeline; and

the heat transfer plate is ring-shaped, an inner wall and an outer wall of the heat transfer plate being in contact with the cooling pipeline and the ring-shaped connector, respectively.

~~4~~2. The electrostatic chuck according to claim ~~3~~1, wherein an axial thickness and a radial length of the heat transfer plate and/or contact areas where the inner wall and the outer wall of the heat transfer plate are respectively in contact with the cooling pipe and the ring-shaped connector are set to control heat dissipation efficiency of the heat transfer plate.

~~5~~3. The electrostatic chuck according to claim ~~4~~2, wherein the heat dissipation efficiency of the heat transfer plate ranges from 10 W to 500 W.

~~6~~4. The electrostatic chuck according to claim ~~2~~1, wherein the heat transfer plate and the cooling pipeline are connected by welding.

75. The electrostatic chuck according to any one of claims 1-~~64~~, wherein the thin-wall structure further includes:

a heat absorption assembly, contacting the cooling pipeline, being opposite to the bottom of the heating body, and configured to absorb heat radiated by the heating body in a heat radiation manner and transfer the heat to the cooling pipeline.

86. The electrostatic chuck according to claim 75, wherein the heat absorption assembly includes:

a heat absorption plate, fixedly connected to the cooling pipeline, and a plurality of heat absorption sheets being arranged on a surface of the heat absorption plate opposite to the heating body.

97. The electrostatic chuck according to claim 86, wherein the plurality of heat absorption sheets include a plurality of ring structure structures with different diameters, the plurality of ring structure structures being arranged concentrically.

~~108~~. The electrostatic chuck according to claim 86, wherein the cooling pipeline is arranged around an axis of the heat absorption plate.

~~119~~. The electrostatic chuck according to claim 1, wherein a vertical distance between the cooling pipeline and the heating body ranges from 2 mm – 30 mm.

~~1210~~. The electrostatic chuck according to claim ~~119~~, wherein the vertical distance between the cooling pipeline and the heating body is 5 mm.

~~1311~~. A reaction chamber, comprising an electrostatic chuck according to any one of claims 1 to ~~1210~~.