

CLAIMS:

1. A bearing apparatus, comprising an electrostatic chuck, a central temperature control unit and an edge assembly, wherein

the central temperature control unit is provided in the electrostatic chuck and configured to adjust temperature of a central area of a to-be-processed workpiece supported by the electrostatic chuck;

the edge assembly is provided around an outer circumferential wall of the electrostatic chuck and the edge area of the to-be-processed workpiece is supported by the edge assembly, and comprises a focusing ring, a base ring and an insulation ring sequentially stacked from up to down; and

the bearing apparatus further comprises an edge temperature control unit provided in the edge assembly and configured to adjust temperature of an edge area of the to-be-processed workpiece by way of heat exchange.

2. The bearing apparatus according to claim 1, wherein the edge temperature control unit comprises at least one heat exchange channel provided in the edge assembly and around the electrostatic chuck in a circumferential direction of the electrostatic chuck, the at least one heat exchange channel being configured to accommodate a flowable heat exchange medium therein.

3. The bearing apparatus according to claim 2, wherein the heat exchange channel is provided in the base ring or the focusing ring, and has an inlet and an outlet connected with a medium source for providing the heat exchange medium; or, the edge temperature control unit comprises two heat exchange channels connected with each other, which are provided in the base ring and the focusing ring, respectively, and the heat exchange channel provided in the base ring has an inlet and an outlet connected with the medium source for providing the heat exchange medium; and

the edge assembly further comprises two guiding channels, one of which is connected between the inlet of the heat exchange channel and an output tube of the medium source to allow them to communicate with each other, and the other of which