Claims

1. A contactless electric power supply mechanism for a rotary table of a wafer rotating and holding device, the contactless electric power supply mechanism comprising:

a rotary shaft;

a rotary table placed on an end of the rotary shaft, the rotary table being configured to hold a wafer on an upper surface of the rotary table;

a drive motor configured to supply motive power to the rotary shaft;

a fixed-side primary coil wound around the rotary shaft;

an electric power supply source connected to the fixed-side primary coil;

a rotary table-side secondary coil provided so as to correspond to the fixed-side primary coil and be separated from the fixed-side primary coil by a predetermined distance, the rotary table-side secondary coil being mounted to the rotary table; and

a load connected to the rotary table-side secondary coil,

wherein the load is supplied with electric power by electromagnetic induction via the rotary table-side secondary coil.

2. A contactless electric power supply mechanism according to claim 1, wherein the load comprises a wafer processing mechanism for performing processing on the wafer placed on the rotary table.

3. A contactless electric power supply mechanism according to claim 1, further comprising:

a first resonant capacitor connected to the fixed-side primary coil;

and

a second resonant capacitor connected to the rotary table-side secondary coil.

4. A contactless electric power supply method for a rotary table, the contactless electric power supply method comprising:

providing a contactless electric power supply mechanism comprising:

a rotary shaft;

a rotary table placed on an end of the rotary shaft, the rotary table being configured to hold a wafer on an upper surface of the rotary table;

a drive motor configured to supply motive power to the rotary shaft;

a fixed-side primary coil wound around the rotary shaft;

an electric power supply source connected to the fixed-side primary coil;

a rotary table-side secondary coil provided so as to correspond to the fixed-side primary coil and be separated from the fixed-side primary coil by a predetermined distance, the rotary table-side secondary coil being mounted to the rotary table; and

a load connected to the rotary table-side secondary coil.

supplying electric power to the load via the contactless electric power supply mechanism.

5. A wafer rotating and holding device, comprising:

a contactless electric power supply mechanism comprising:

a rotary shaft;

a rotary table placed on an end of the rotary shaft, the rotary table being configured to hold a wafer on an upper surface of the rotary table;

a drive motor configured to supply motive power to the rotary shaft;

a fixed-side primary coil wound around the rotary shaft;

an electric power supply source connected to the fixed-side primary coil;

a rotary table-side secondary coil provided so as to correspond to the fixed-side primary coil and be separated from the fixed-side primary coil by a predetermined distance, the rotary table-side secondary coil being mounted to the rotary table; and

a load connected to the rotary table-side secondary coil, wherein the load is supplied with electric power by electromagnetic induction via the rotary table-side secondary coil.

6. A wafer rotating and holding device according to claim 5, further comprising a spin processing mechanism.

7. A wafer rotating and holding device according to claim 5, wherein the load comprises a wafer processing mechanism for performing processing on the wafer placed on the rotary table.

8. A wafer rotating and holding device according to claim 5, wherein the contactless electric power supply mechanism further comprises:

a first resonant capacitor connected to the fixed-side primary coil; and

a second resonant capacitor connected to the rotary table-side

secondary coil.

9. A wafer rotating and holding device according to claim 7, wherein the contactless electric power supply mechanism further comprises:

a first resonant capacitor connected to the fixed-side primary coil; and

a second resonant capacitor connected to the rotary table-side secondary coil.

10. A contactless electric power supply method according to claim 4, wherein the load comprises a wafer processing mechanism for performing processing on the wafer placed on the rotary table.

11. A contactless electric power supply method for a rotary table according to claim 4, wherein the contactless electric power supply mechanism further comprises:

a first resonant capacitor connected to the fixed-side primary coil; and

a second resonant capacitor connected to the rotary table-side secondary coil.

12. A contactless electric power supply method according to claim 10, wherein the contactless electric power supply mechanism further comprises:

a first resonant capacitor connected to the fixed-side primary coil; and

a second resonant capacitor connected to the rotary table-side secondary coil.

13. A contactless electric power supply mechanism according to claim 2, further comprising:

a first resonant capacitor connected to the fixed-side primary coil; and

a second resonant capacitor connected to the rotary table-side secondary coil.

5