

CLAIMS:

1. A system comprising:

——a rotational magnetic housing, comprising:

——an upper plate;

——an outer sidewall;

——an inner sidewall defining a round central opening; and

——a lower plate; and

a plurality of retaining brackets disposed in the rotational magnetic housing,

wherein:

——each retaining bracket of the plurality of retaining brackets is disposed in the rotational magnetic housing with a distance d between each retaining bracket;

;

——each retaining bracket has an upper surface coupled to the upper plate and a lower surface coupled to the lower plate of the rotational magnetic housing; and

——the plurality of retaining brackets have a plurality of magnets removably disposed therein, each magnet of the plurality of magnets is retained in a respective retaining bracket with a pitch p between each magnet of the plurality of magnets, and the plurality of magnets are configured to travel in a circular path when the rotational magnetic housing is rotated around the round central opening.

2. The system of claim 1, wherein the rotational magnetic housing is coupled to a drive system, the drive system comprising:

a motor coupled to a belt, wherein the belt is to be disposed around the rotational magnetic housing, the belt has a plurality of lugs, and each lug corresponds to a groove of a plurality of grooves of the outer sidewall of the rotational magnetic housing.

3. The system of claim 2, wherein the drive system and the rotational magnetic housing are coupled to a housing lift system operable to raise and lower the rotational magnetic housing and the drive system.

4. The system of claim 3, wherein the rotational magnetic housing is coupleable to an exterior sidewall of a chamber.

5. The system of claim 1, wherein the retaining brackets are coupled to tracks and the retaining brackets are actuated to move on the tracks.

6. A chamber comprising:

——a chamber body;

——a chamber lid having a gas distribution assembly;

——a substrate support positioned opposite the gas distribution assembly to define a process volume, the process volume having a center axis;

——a radio frequency (RF) source operable to be coupled to an electrode disposed within substrate support; and

a rotational magnetic housing system having a rotational magnetic housing coupled to the chamber, wherein the rotational magnetic housing comprises:

an upper plate;

——an outer sidewall;

——an inner sidewall defining a round central opening;

——a lower plate; and

——a plurality of retaining brackets disposed in the rotational magnetic housing, wherein:

——each retaining bracket of the plurality of retaining brackets is disposed in the rotational magnetic housing with a distance d between each retaining bracket;

——each retaining bracket has an upper surface coupled to the upper plate and a lower surface coupled to the lower plate of the rotational magnetic housing; and

_____the plurality of retaining brackets have a plurality of magnets removably disposed therein, wherein each magnet of the plurality of magnets is retained in a respective retaining bracket with a pitch p between each magnet of the plurality of magnets, and the plurality of magnets are configured to travel in a circular path when the rotational magnetic housing is rotated around the round central opening.

7. The chamber of claim 6, wherein the inner sidewall of the rotational magnetic housing is coupled to an exterior wall of a chamber spacer, the chamber spacer having:
a first flange coupled to a mounting plate of the chamber body; and
a second flange coupled to the chamber lid.

8. The chamber of claim 7, wherein the rotational magnetic housing is coupled to a drive system, the drive system comprises a motor coupled to a belt, the belt is to be disposed around the rotational magnetic housing, the belt has a plurality of lugs, and each lug corresponds to a groove of a plurality of grooves of the outer sidewall of the rotational magnetic housing.

9. The chamber of claim 8, wherein the drive system and the rotational magnetic housing are coupled to a housing lift system operable to raise and lower the rotational magnetic housing and the drive system.

10. The chamber of claim 7, wherein the exterior wall of the chamber spacer includes a polymer material.

11. The chamber of claim 6, wherein the ~~rotational magnetic housing is coupled to the substrate support,~~ the substrate support is coupled to a substrate support drive system configured to rotate the substrate support about the center axis of the process volume.

12. The chamber of claim 6, wherein the retaining brackets are coupled to tracks and the retaining brackets are actuated to move on the tracks.

13. ~~A chamber comprising:~~
- ~~— a chamber body; —~~
 - ~~— a chamber lid having a gas distribution assembly;~~
 - ~~— a substrate support positioned opposite the gas distribution assembly to define a process volume, the process volume having a center axis;~~
 - ~~— a radio frequency (RF) source operable to be coupled to an electrode disposed within substrate support; and~~
 - ~~— an electromagnet magnetic housing system having an electromagnet housing coupled to the chamber, the electromagnet housing comprises:~~
 - ~~an upper plate;~~
 - ~~— an outer sidewall;~~
 - ~~— an inner sidewall defining a round central opening;~~
 - ~~— a lower plate; and~~
 - ~~two or more conductive wires, each of the conductive wires coiled one or more times in respective portions of the electromagnet housing, each of the conductive wires are operable to be individually connected to a power source.~~
14. ~~The chamber of claim 13, wherein the two or more conductive wires have alternating polarities.~~
15. ~~The chamber of claim 13, wherein the two or more conductive wires are equally spaced from each other in the electromagnet housing.~~