CLAIMS

~~What is claimed is:~~

1. An apparatus, for use in a processing chamber, comprising:

an edge ring~~a consumable~~ within the processing chamber; and

a piezo transducer, wherein the piezo transducer is configured to act as a scale positioned to measure a mass of the ~~consumable~~edge ring and an actuator arranged to raise and lower the edge ring based on the mass as measured by the scale, wherein the piezo transducer outputs a measured current or voltage indicative of the mass of the edge ring, and wherein an applied current or voltage input to the piezo transducer causes movement of the actuator to raise and lower the edge ring.

2. The apparatus, as recited in claim 1, further comprising a controller electrically connected ~~between~~ to the scale ~~and the controller~~.

3. The apparatus, as recited in claim 1, further comprising:

a controller electrically connected to the piezo transducer,

wherein the controller comprises:

at least one CPU; and

non-transitory computer readable media electrically connected to the at least one CPU, wherein the computer readable media, comprises:

non-transitory computer readable code for measuring a voltage or current from the piezo transducer;

non-transitory computer readable code for determining an applied voltage or current from the measured voltage or current; and

non-transitory computer readable code for applying the determined applied voltage or current across the piezo transducer, to raise and lower the edge ring within the processing chamber.

~~3. The apparatus, as recited in claim 2, further comprising an actuator for moving the consumable based on measured mass by the scale.~~

~~4. The apparatus, as recited in claim 3, wherein the scale comprises a piezo transducer wherein measured current or voltage from the piezo transducer is used to determine mass.~~

~~5. The apparatus, as recited in claim 4, wherein the actuator also comprises the piezo transducer, wherein an applied current or voltage provides movement for the actuator.~~

~~6~~4. The apparatus, as recited in claim ~~5~~1, wherein the processing chamber is a plasma processing chamber.

~~7. The apparatus, as recited in claim 6, wherein the consumable is in a shape of a ring.~~

~~8. The apparatus, as recited in claim 7, wherein the consumable shape of a ring is in the shape of a segmented ring.~~

~~9. The apparatus, as recited in claim 7, the consumable is an edge ring.~~

~~10~~5. The apparatus, as recited in claim ~~9~~1, wherein the scale further comprises tangible computer readable media, comprising:

computer readable code for measuring a voltage from the piezo transducer; and

computer readable code for using the measured voltage as a mass indicator.

~~11~~6. The apparatus, as recited in claim ~~10~~5, wherein the actuator further comprises tangible computer readable media, comprising:

computer readable code for determining an applied voltage; and

computer readable code for applying the determined applied voltage across the piezo transducer.

12. The apparatus, as recited in claim 2, wherein the scale comprises a piezo transducer wherein measured current or voltage from the piezo transducer is used to determine mass.

13. The apparatus, as recited in claim 12, further comprising:

a controller electrically connected to the piezo transducer, wherein the controller comprises:

at least one CPU; and

computer readable media electrically connected to the at least one CPU, wherein the computer readable media, comprises:

computer readable code for measuring a voltage or current from the piezo transducer;

computer readable code for determining an applied voltage or current from the measured voltage or current; and

computer readable code for applying the determined applied voltage or current across the piezo transducer, wherein the applied determined applied voltage or current moves the consumable within the processing chamber.

14. A method comprising:

measuring a mass of at least one consumable in a process chamber;

using the process chamber;

measuring a change of mass of the at least one consumable;

conditioning the at least one consumable according to the measured change of mass of the at least one consumable.

15. The method, as recited in claim 14, further comprising replacing the at least one consumable according to the measured change of mass of the at least one consumable.

16. The method, as recited in claim 15, wherein the conditioning the at least one consumable comprises moving the at least one consumable.

~~17. The method, as recited in claim 14, wherein the conditioning the at least one consumable comprises adjusting a vertical height of the at least one consumable according to measured change of mass of the at least one consumable.~~

~~18. The method, as recited in claim 14, wherein the measuring the change of mass of the at least one consumable, comprises measuring a voltage or current from a piezo transducer, and wherein the conditioning the at least one consumable comprises applying a voltage or current to the piezo transducer, which adjusts a vertical height of the at least one consumable.~~

~~19~~7. An apparatus, comprising:

a plasma processing chamber;

~~a consumable~~an edge ring within the processing chamber;

a piezo transducer positioned to measure a mass of the ~~consumable~~edge ring and act as an actuator for moving the ~~consumable~~edge ring;

a controller electrically connected to the piezo transducer, wherein the controller comprises:

at least one CPU; and

non-transitory computer readable media electrically connected to the at least one CPU, wherein the computer readable media, comprises:

non-transitory computer readable code for measuring a voltage or current from the piezo transducer;

non-transitory computer readable code for determining an applied voltage or current from the measured voltage or current; and

non-transitory computer readable code for applying the determined applied voltage or current across the piezo transducer to raise and lower the edge ring~~, wherein the applied determined applied voltage or current moves the consumable~~ within the processing chamber.