

What is claimed is:

1. A process kit, comprising:
 - a generally cylindrical shield comprising:
 - a substantially flat cylindrical body having an upper surface tapering downs to an inner end;
 - at least one elongated cylindrical ring extending downward from the body; and
 - a mounting portion extending upwards from the upper surface of the body from an outer wall of the body, the mounting portion having a mounting flange extending radially outward beyond the outer wall of the body, an inner wall extending from the upper surface of the body, and an inner taper that flares radially outward and upwards from the inner wall.
2. The process kit of claim 1, wherein the body is fabricated from at least one of stainless steel or titanium.
3. The process kit of claim 1, wherein the body is fabricated from or coated with a conductive material.
4. The process kit of claim 1, wherein the at least one elongated cylindrical ring an orientation of about 5 to about 35 degrees relative to a centerline of the body.
5. The process kit of claim 1, wherein the at least one elongated cylindrical ring further comprises:
 - an inner ring; and
 - an outer ring spaced in a substantially parallel relation to the inner ring.
6. The process kit of claim 1, wherein the inner edge of the body truncates the sloped surface, and wherein the inner edge is substantially parallel to a centerline of the body.
7. A process kit comprising:

a generally cylindrical deposition ring comprising:

a substantially flat cylindrical body having an upper surface and a lower surface, the lower surface configured to be supported on a ledge of a substrate support pedestal;

at least one downwardly extending u-channel coupled to an outer portion of the body; and

an inner wall extending upward from the upper surface of an inner region of the body and having a substrate support surface.

8. The process kit of claim 7, wherein the deposition ring further comprises:
a ledge extending radially inward from the inner wall, and
a plurality of buttons disposed on an upper surface of the ledge and defining the substrate support surface.
9. The process kit of claim 8, wherein the plurality of buttons further comprises:
three buttons equally spaced apart in a polar array.
10. The process kit of claim 7, wherein the u-channel is facing upwards.
11. The process kit of claim 7, wherein the u-channel further comprises:
a first leg coupled to the body of the deposition ring;
a second leg spaced outward from the first leg; and
a bottom joining the legs.
12. The process kit of claim 11, wherein the body is fabricated from at least one of stainless steel or titanium.
13. The process kit of claim 7, wherein the body of the deposition ring further comprises:
a trap wall extending upwards from the upper surface of the deposition ring;
and
a lip extending inward and downward from the trap wall to overhang an inner portion of the upper surface of the deposition ring.

14. The process kit of claim 13, wherein an upper surface of the trap wall further comprises:
an inner sloped wall meeting an outer sloped wall at an apex.

CLAIMS

1. A process kit, comprising:

a generally cylindrical shield comprising:

a substantially flat cylindrical body having an upper surface tapering down to an inner end, wherein the body further comprises:

a sloped surface extending downward from the upper surface; and

a second lip extending downward from the sloped surface;

at least one elongated cylindrical ring extending downward from the body;
and

a mounting portion extending upwards from the upper surface of the body from an outer wall of the body, the mounting portion having a mounting flange extending radially outward beyond the outer wall of the body, the mounting flange and the outer wall of the body defining a first lip; an inner wall extending from the upper surface of the body, and an inner taper that flares radially outward and upwards from the inner wall.

2. The process kit of claim 1, wherein the body is fabricated from at least one of stainless steel or titanium.

3. The process kit of claim 1, wherein the body is fabricated from or coated with a conductive material.

4. The process kit of claim 1, wherein at least a portion of the body has a surface treatment.

5. The process kit of claim 1, wherein at least a portion of the body has a bead blasted surface.

6. The process kit of claim 1, wherein the at least one elongated cylindrical ring

has a perpendicular orientation relative to a centerline of the body.

7. The process kit of claim 1, wherein the at least one elongated cylindrical ring has an orientation of about 5 to about 35 degrees relative to a centerline of the body.

8. The process kit of claim 1, wherein the at least one elongated cylindrical ring further comprises:

an inner ring; and

an outer ring spaced in a substantially parallel relation to the inner ring.

9. The process kit of claim 1, wherein the inner end of the body truncates a sloped surface, and wherein the inner end is substantially parallel to a centerline of the body.

10. The process kit of claim 1 further comprising:

a generally cylindrical deposition ring comprising:

a substantially flat cylindrical body having an upper surface and a lower surface, the lower surface configured to be supported on a ledge of a substrate support pedestal;

at least one downwardly extending u-channel coupled to an outer portion of the body;

an inner wall extending upward from the upper surface of an inner region of the body and having a substrate support surface; and

a substrate support ledge extending radially inward from the inner wall.

11. The process kit of claim 10, wherein the deposition ring further comprises:

a ledge extending radially inward from the inner wall; and

a plurality of buttons disposed on an upper surface of the ledge and defining the substrate support surface.

12. The process kit of claim 11, wherein the plurality of buttons further comprises:
three buttons equally spaced apart in a polar array.
13. The process kit of claim 10, wherein the u-channel is configured to interleave with the at least one ring of the shield.
14. The process kit of claim 10, wherein the u-channel further comprises:
a first leg coupled to the body of the deposition ring;
a second leg spaced outward from the first leg; and
a bottom joining the legs.
15. The process kit of claim 14, wherein the legs are substantially parallel to a centerline of the deposition ring.
16. The process kit of claim 14, wherein the legs have an orientation of about 5 to about 35 degrees relative to a centerline of the deposition ring.
17. The process kit of claim 10, wherein the body of the deposition ring further comprises:
a trap wall extending upwards from the upper surface of the deposition ring; and
a lip extending inward and downward from the trap wall to overhang an inner portion of the upper surface of the deposition ring.
18. The process kit of claim 17, wherein an upper surface of the trap wall further comprises:
an inner sloped wall meeting an outer sloped wall at an apex.
19. A process kit comprising:
a generally cylindrical deposition ring comprising:

a substantially flat cylindrical body having an upper surface and a lower surface, the lower surface configured to be supported on a ledge of a substrate support pedestal;
at least one downwardly extending u-channel coupled to an outer portion of the body;
an inner wall extending upward from the upper surface of an inner region of the body and having a substrate support surface;
a ledge extending radially inward from the inner wall; and
a plurality of buttons disposed on an upper surface of the ledge and defining the substrate support surface.

20. The process kit of claim 19, wherein the plurality of buttons further comprises:
three buttons equally spaced apart in a polar array.

21. The process kit of claim 19, wherein the u-channel is facing upwards.

22. The process kit of claim 19, wherein the u-channel further comprises:
a first leg coupled to the body of the deposition ring;
a second leg spaced outward from the first leg; and
a bottom joining the legs.

23. The process kit of claim 22, wherein the legs are substantially parallel to a centerline of the deposition ring.

24. The process kit of claim 22, wherein the body is fabricated from at least one of stainless steel or titanium.

25. The process kit of claim 19, wherein the body of the deposition ring further comprises:
a trap wall extending upwards from the upper surface of the deposition ring; and

a lip extending inward and downward from the trap wall to overhang an inner portion of the upper surface of the deposition ring.

26. The process kit of claim 25, wherein an upper surface of the trap wall further comprises:

an inner sloped wall meeting an outer sloped wall at an apex.