Claims:

1. A process kit for use in a physical vapor deposition chamber, comprising:

a shield comprising an inner wall with an innermost diameter configured to surround a target when disposed in the physical vapor deposition chamber, wherein a ratio of a surface area of the shield to a planar area of the inner diameter is about 3 to about 10.

2. The process kit of claim 1, wherein the shield is made of at least one of an aluminum alloy or stainless steel.

3. The process kit of claim 1, wherein the inner wall comprises a plurality of alternating bends that extend in a generally 90º increments from top, down, outwards, down, inwards, and down forming an entire generally C shape between alternating bends.

4. The process kit as in any of claims 1 to 3, wherein the plurality of alternating bends form a vertical square wave with rounded transitions when viewed along a cross-section of two consecutive bends.

5. The process kit as in any of claims 1 to 3, wherein the plurality of alternating bends are symmetrical with each other.

6. The process kit as in any of claims 1 to 3, wherein the plurality of alternating bends are asymmetrical with each other.

7. The process kit as in any of claims 1 to 3, wherein the inner wall has a bottom area in which a plurality of concentric vertical fins are disposed.

8. The process kit as in any of claims 1 to 3, wherein the plurality of concentric vertical fins are spaced-apart at about .150 inches to about .2 inches.

9. The process kit as in any of claims 1 to 3, wherein the plurality of concentric vertical fins have a height that is about equal to an entire C shape between alternating bends.

10. The process kit of claim 1, wherein the inner wall comprises a plurality of spaced-apart concentric walls extending upward from a bottom of the shield to define a plurality of vertical wells.

11. The process kit as in any of claims 1 to 3 or 10, wherein a height of each of the plurality of spaced-apart concentric walls progressively decreases from an outermost wall to an innermost wall.

12. A substrate processing apparatus, comprising:

a chamber body having a substrate support disposed therein;

a target coupled to the chamber body opposite the substrate support;

an RF power source to form a plasma within the chamber body; and

a shield comprising an inner wall with an innermost diameter configured to surround the target when disposed in a physical vapor deposition chamber, wherein a ratio of a surface area of the shield to a planar area of the inner diameter is about 3 to about 10.

13. The substrate processing apparatus of claim 12, wherein the shield is made of at least one of an aluminum alloy or stainless steel.

14. The substrate processing apparatus as in any of claims 12 or 13, wherein the inner wall comprises a plurality of alternating bends that extend in a generally 90º increments from top, down, outwards, down, inwards, and down forming an entire generally C shape between alternating bends.

15. The substrate processing apparatus as in any of claims 12 or 13, wherein the plurality of alternating bends form a vertical square wave with rounded transitions when viewed along a cross-section of two consecutive bends.

16. The substrate processing apparatus as in any of claims 12 or 13, wherein the plurality of alternating bends are symmetrical with each other.

17. The substrate processing apparatus of claim 12, wherein the plurality of alternating bends are asymmetrical with each other.

18. The substrate processing apparatus of claim 17, wherein the inner wall has a bottom area in which a plurality of concentric vertical fins are disposed.

19. The substrate processing apparatus as in any of claims 12, 13, or 18 wherein the plurality of concentric vertical fins are spaced-apart at about .150 inches to about .2 inches.

20. A process kit for use in a physical vapor deposition chamber, comprising:

a shield comprising an inner wall with an innermost diameter configured to surround a target when disposed in the physical vapor deposition chamber, the inner wall comprising one of a plurality of alternating bends that extend in generally 90º increments from top, down, outwards, down, inwards, and down forming an entire generally C shape between alternating bends or a plurality of spaced-apart concentric walls extending upward from a bottom of the shield to define a plurality of vertical wells,

wherein a ratio of a surface area of the shield to a planar area of the inner diameter is about 3 to about 10.