

Claims:

1. A substrate support assembly, comprising:
 - a susceptor for supporting a substrate, the susceptor having a recessed surface with one or more ridges; and
 - a supporting transfer mechanism coupled to the susceptor, the supporting transfer mechanism having a surface for supporting a peripheral edge of the substrate, the supporting transfer mechanism being movable relative to an upper surface of the susceptor, wherein the supporting transfer mechanism comprises:
 - a disc-shaped body;
 - annular portions extending from a perimeter of the disc-shaped body; and
 - a pocket formed in the annular portion to receive one of the one or more ridges of the recessed surface.
2. The substrate support assembly of claim 1, wherein the supporting transfer mechanism comprises a ring.
3. The substrate support assembly of claim 1, wherein the supporting transfer mechanism comprises a plurality of ring segments.
4. The substrate support assembly of claim 3, wherein the susceptor comprises a recessed portion sized to receive the ring segments.
5. The substrate support assembly of claim 2, wherein the ring has a first gap.
6. The substrate support assembly of claim 5, wherein the ring has a second gap opposing the first gap.
7. The substrate support assembly of claim 5, wherein the susceptor comprises a recessed portion sized to receive the ring.
8. The substrate support assembly of claim 1, further comprising:
 - a plurality of lift pins for supporting the susceptor.
9. The substrate support assembly of claim 8, further comprising:
 - a plurality of support pins positioned radially outward of the plurality of lift pins.
10. The substrate support assembly of claim 9, wherein each of the plurality of lift pins are independently movable relative to the plurality of support pins.

11. The substrate support assembly of claim 9, wherein each of the support pins comprises a flared head disposed on a shaft.
12. The substrate support assembly of claim 11, wherein the flared head comprises a sloped surface.
13. The substrate support assembly of claim 1, wherein the disc-shaped body comprises a detachable support plate.