CLAIMS

What is claimed is:

1. An integrated steerability array arrangement for managing plasma uniformity within a plasma processing environment to facilitate processing of a substrate, comprising:

an array of electrical elements;

an array of gas injectors, wherein said array of electrical elements and said array of gas injectors are arranged to create a plurality of plasma regions, each plasma region of said plurality of plasma regions being substantially similar; and

an array of pumps, individual one of said array of pumps being interspersed among said array of electrical elements and said array of gas injectors, said array of pumps being configured to facilitate local removal of gas exhaust to maintain a uniform plasma region within said plasma processing environment.

2. The integrated steerability array arrangement of claim 1 wherein said array of electrical elements is arranged on a dielectric plate.

3. The integrated steerability array arrangement of claim 2 wherein said array of electrical elements is an array of electrical element pairs.

4. The integrated steerability array arrangement of claim 3 wherein said array of electrical element pairs is an array of capacitive element pairs.

5. The integrated steerability array arrangement of claim 4 wherein said array of capacitive element pairs is an array of parallel plate pairs.

6. The integrated steerability array arrangement of claim 3 wherein said array of electrical element pairs is an array of inductive element pairs.

7. The integrated steerability array arrangement of claim 6 wherein said array of inductive element pairs is an array of antenna pairs.

8. The integrated steerability array arrangement of claim 3 wherein said array of electrical element pairs is arranged in a push-pull ladder arrangement.

9. The integrated steerability array arrangement of claim 1 wherein said integrated steerability array arrangement has a symmetrical pattern.

10. The integrated steerability array arrangement of claim 9 wherein said integrated steerability array arrangement has a concentric configuration.

11. The integrated steerability array arrangement of claim 10 wherein said array of electrical elements is arranged as concentric rings with a center and interspersed between said array of

electrical elements is individual ones of said array of gas injectors and said individual ones of said array of pumps.

12. The integrated steerability array arrangement of claim 9 wherein said integrated steerability array arrangement has a rectangular configuration.

13. The integrated steerability array arrangement of claim 9 wherein said integrated steerability array arrangement has a hexagonal configuration.

14. A method for providing steerability in a plasma processing environment during processing of a substrate, comprising:

managing power distribution during said processing of said substrate by controlling power being delivered into said plasma processing environment through an array of electrical elements;

directing gas flow during said processing of said substrate, said directing including controlling amount of gas flowing through an array of gas injectors into said plasma processing environment, individual ones of said array of gas injectors being interspersed between said array of electrical elements; and

controlling gas exhausting during said processing of said substrate by managing amount of gas exhaust being removed by an array of pumps, wherein said array of electrical elements, said array of gas injectors, and said array of pumps are arranged to create a plurality of plasma regions, each plasma region of said plurality of plasma regions being substantially similar, thereby creating a uniform plasma region across said substrate.

15. The method of claim 14 wherein said array of electrical elements is arranged on a dielectric plate.

16. The method of claim 15 wherein said array of electrical elements is an array of electrical element pairs.

17. The method of claim 16 wherein said array of electrical element pairs is an array of capacitive element pairs.

18. The method of claim 15 wherein said array of electrical element pairs is an array of inductive element pairs.

19. The method of claim 15 wherein individual ones of said array of electrical element pairs is arranged in a push-pull ladder arrangement.

20. The method of claim 19 wherein said array of electrical elements is arranged as concentric rings with a center and interspersed between said array of electrical elements is said array of gas injectors and said array of pumps.

CLAIMS

What is claimed is:

1. An integrated steerability array arrangement for managing plasma uniformity within a plasma processing environment to facilitate processing of a substrate, comprising:

an array of electrical elements;

an array of gas injectors, wherein said array of electrical elements and said array of gas injectors are arranged to create a plurality of plasma regions, each plasma region of said plurality of plasma regions being substantially similar; and

an array of pumps, individual one of said array of pumps being interspersed among said array of electrical elements and said array of gas injectors, said array of pumps being configured to facilitate local removal of gas exhaust to maintain a uniform plasma region within said plasma processing environment.

2. The integrated steerability array arrangement of claim 1 wherein said array of electrical elements is arranged on a dielectric plate.

3. The integrated steerability array arrangement of claim 2 wherein said array of electrical elements is an array of electrical element pairs.

4. The integrated steerability array arrangement of claim 3 wherein said array of electrical element pairs is an array of capacitive element pairs.

5. The integrated steerability array arrangement of claim 4 wherein said array of capacitive element pairs is an array of parallel plate pairs.

6. The integrated steerability array arrangement of claim 3 wherein said array of electrical element pairs is an array of inductive element pairs.

7. The integrated steerability array arrangement of claim 6 wherein said array of inductive element pairs is an array of antenna pairs.

8. The integrated steerability array arrangement of claim 3 wherein said array of electrical element pairs is arranged in a push-pull ladder arrangement.

9. The integrated steerability array arrangement of claim 1 wherein said integrated steerability array arrangement has a symmetrical pattern.

10. The integrated steerability array arrangement of claim 9 wherein said integrated steerability array arrangement has a concentric configuration.

11. The integrated steerability array arrangement of claim 10 wherein said array of electrical elements is arranged as concentric rings with a center and interspersed between said array of electrical elements is individual ones of said array of gas injectors and said individual ones of said array of pumps.

12. The integrated steerability array arrangement of claim 9 wherein said integrated steerability array arrangement has a rectangular configuration.

13. The integrated steerability array arrangement of claim 9 wherein said integrated steerability array arrangement has a polygonal configuration.

14. An integrated steerabilitly array arrangement for managing plasma uniformity within a plasma processing environment to facilitate processing of a substrate, comprising:

an array of electrical elements;

an array of gas injectors, wherein said array of electrical elements and said array of gas injectors are arranged to create a plurality of plasma regions, each plasma region of said plurality of plasma regions being substantially similar, individual ones of said array of gas injectors being configured to be independently controllable; and

an array of pumps, individual ones of said array of pumps having a port, said individual ones of said array of pumps and individual ones of said ports interspersed among said array of electrical elements and said array of gas injectors, said individual ones of said array of pumps being configured to be independently controllable to facilitate local removal of gas exhaust to maintain a uniform plasma region across said plurality of plasma regions within said plasma processing environment.

15. The integrated steerability array arrangement of claim 14 wherein individual ones of said array of electrical elements are configured to be independently controllable.

16. The integrated steerability array arrangement of claim 14 wherein said integrated steerability array arrangement has a symmetrical pattern.

17. The integrated steerability array arrangement of claim 14 wherein said integrated steerability array arrangement has a concentric configuration.

18. The integrated steerability array arrangement of claim 14 wherein said integrated steerability array arrangement has a rectangular configuration.

19. The integrated steerability array arrangement of claim 14 wherein said integrated steerability array arrangement has a polygonal configuration.