CLAIMS

1. A method for fabricating a semiconductor device, comprising:

forming, within a physical vapor deposition (PVD) chamber, a first layer by use of a PVD process on a surface of substrate that comprises a plurality of features formed therein, wherein forming the first layer comprises biasing a target within the PVD chamber; and

etching, within the PVD chamber, at least a portion of the first layer, wherein the etching comprises:

applying a substrate bias to an electrode disposed within a substrate support near a substrate receiving surface, wherein applying the substrate bias comprises delivering a pulsed-voltage (PV) waveform to the electrode; and

exposing the substrate to a plasma generated within the PVD chamber.

2. The method of claim 1, wherein delivering the PV waveform comprises:

delivering a first voltage to the electrode disposed within the substrate support for a first period of time; and

halting delivery of the first voltage to the electrode disposed within the substrate support for a second period of time.

3. The method of claim 2, wherein the first voltage is about negative 100 V to about negative 2000 V.

4. The method of claim 1, further comprising adjusting a first voltage of the PV waveform to adjust a depth of etching of at least the portion of the first layer, wherein the first voltage is about negative 100 V to about negative 2000 V.

5. The method of claim 1, wherein forming the first layer, and etching at least a portion of the first layer, occur simultaneously.

6. The method of claim 5, wherein the simultaneous forming and etching of the first layer cause a simultaneous deposition and redeposition of one or more materials of the first layer to improve step coverage.

7. The method of claim 1, further comprising altering a radial distribution of the plasma generated within the PVD chamber, wherein altering the radial distribution of the plasma further comprises delivering an electric current to one or more electromagnet assemblies aligned around the PVD chamber.

8. A method for fabricating a semiconductor device, comprising:

forming, within a first physical vapor deposition (PVD) chamber, a first layer on a surface of substrate that comprises a plurality of features formed therein, wherein forming the first layer comprises biasing a target within the first PVD chamber;

transferring the substrate from the first PVD chamber to a second PVD chamber; and

etching, within the second PVD chamber, at least a portion of the first layer, wherein the etching comprises:

applying a substrate bias to an electrode disposed within a substrate support near a substrate receiving surface, wherein applying the substrate bias comprises delivering a PV waveform to the electrode; and

exposing the substrate to a plasma generated within the second PVD chamber.

9. The method of claim 8, wherein delivering the PV waveform comprises:

delivering a first voltage to the electrode disposed within the substrate support for a first period of time; and

halting delivery of the first voltage to the electrode disposed within the substrate support for a second period of time.

10. The method of claim 9 wherein the first voltage is about negative 100 V to about negative 2000 V.

11. The method of claim 8, further comprising adjusting a first voltage of the PV waveform to adjust a depth of etching of at least the portion of the first layer, wherein the first voltage is about negative 100 V to about negative 2000 V.

12. The method of claim 8, further comprising biasing a target within the second PVD chamber, and etching at least a portion of the first layer, occur simultaneously.

13. The method of claim 12, wherein the simultaneous biasing the target, and etching of the first layer, within the second PVD chamber, cause a simultaneous deposition and redeposition of one or more materials of the first layer to improve step coverage.

14. The method of claim 8, further comprising altering a radial distribution of the plasma generated within the second PVD chamber, wherein altering the radial distribution of the plasma further comprises delivering an electric current to one or more electromagnet assemblies aligned around the second PVD chamber.