3. The method of claim 1, wherein the bias applied to the lowermost grid is between about -0.5 to -2000 V.

4. The method of claim 1, further comprising changing the bias applied to at least one grid of the grid assembly during operation (c).

5. The method of claim 1, wherein the etching gas in operation (d) is supplied in pulses.

6. The method of claim 1, wherein the plasma generating gas comprises a reactive gas.

7. The method of claim 1, further comprising supplying a processing gas to the lower sub-chamber and reacting the processing gas with the material for removal to form a reacted layer for removal comprising a material selected from the group consisting of an oxide, a nitride, a hydride, a chloride, a fluoride, organometallic complexes, or a combination thereof.

8. The method of claim 7, further comprising reacting the reacted layer for removal with the etching gas to remove the reacted layer for removal.

9. The method of claim 1, further comprising moving at least one grid of the grid assembly during at least one of operations (b)-(e).

10. The method of claim 1, wherein ions present in the upper sub-chamber accelerate through the grid assembly and interact with a surface of the substrate.

11. A method of etching a substrate, comprising:

(a) generating a plasma in an upper region of a plasma reactor;

(b) applying a first negative DC bias to a first grid in the plasma reactor and applying a second negative DC bias to a second grid in the plasma reactor, the first and second grids separating the upper region of the plasma reactor from a lower region of the plasma reactor, and accelerating ions from the plasma onto a surface of the substrate in a lower region of the plasma reactor, wherein the plasma does not contact the substrate;

(c) delivering an etchant gas to a surface of the substrate where the etchant gas reacts to etch metal or semiconductor from the surface and produce a volatile byproduct containing one or more atoms of the metal or semiconductor and one or more ligands from the etchant gas; and

(d) removing the volatile byproduct from the plasma reactor without having the byproduct substantially contact the plasma and without having the volatile byproduct substantially dissociate to a less volatile material.