

What is Claimed:

1. A workpiece support structure of a plasma treatment system, the workpiece support structure comprising:
 - an upper end and a lower end offset from one another along a vertical direction; and
 - first and second support members that extend between the upper end and lower end, that are offset from one another along a horizontal direction such that a cavity is defined between the upper and lower ends and between the first and second support members, wherein the first and second support members are electrically isolated from one another,
 - wherein the first and second support members are configured to support electrodes within the cavity such that:
 - the electrodes are separated from one another along the vertical direction;
 - the electrodes extend between the first and second support members along the horizontal direction;
 - a first set of the electrodes are electrically coupled to the first support member and electrically isolated from the second support member; and
 - a second set of the electrodes, different from the first set, are electrically coupled to the second support member and electrically isolated from the first support member.
2. The workpiece support structure of claim 1, wherein the first and second support members are configured to support the electrodes of the first and second sets in an alternating arrangement along the vertical direction.
3. The workpiece support structure of any of the preceding claims, wherein the first and second support members are configured to support individual ones of the electrodes in the first set between different pairs of the electrodes of the second set.
4. The workpiece support structure of any of the preceding claims, wherein the first and second support members are configured to support individual ones of the electrodes in the second set between different pairs of the electrodes of the first set.
5. The workpiece support structure of any of the preceding claims, wherein each of the first and second support members defines couplers that are offset from one another along the vertical

direction, and the couplers of the first and second support members are configured to engage edges of the electrodes therein so as support the electrodes.

6. The workpiece support structure of any of the preceding claims, wherein each of the first and second support members defines recesses that are offset from one another along the vertical direction, and the recesses of the first and second support members are configured to receive edges of the electrodes therein so as support the electrodes.

7. The workpiece support structure of any of the preceding claims, wherein the workpiece support structure defines a first electrical contact that is configured to engage a first electrical contact of chamber so as to electrically couple the first electrical contacts of the workpiece support structure and chamber with one another.

8. The workpiece support structure of claim 7, wherein the first electrical contact of the workpiece support structure is electrically coupled to the first support member such that the first electrical contact of the workpiece support structure is configured to electrically couple the first electrical contact of the chamber with the first support member.

9. The workpiece support structure of any of claims 7 and 8, comprising an insulator that is configured to electrically isolate the first support member from the second electrical contact of the chamber when the first electrical contacts of the workpiece support structure and chamber are electrically coupled to one another.

10. The workpiece support structure of any of the preceding claims, wherein the workpiece support structure defines a second electrical contact that is configured to receive a second electrical contact of the chamber so as to place the second electrical contacts of the chamber and workpiece support structure in electrical communication with one another.

11. The workpiece support structure of claim 10, wherein the second electrical contact of the workpiece support structure is electrically coupled to the second support member such that the second electrical contact of the workpiece support structure is configured to electrically couple the second electrical contact of the chamber with the second support member.

12. The workpiece support structure of any of claims 10 and 11, wherein the workpiece support structure comprises an insulator that is configured to electrically isolate the second support member from the first electrical contact of the chamber when the second electrical

contacts of the chamber and the workpiece support structure are electrically coupled to one another.

13. The workpiece support structure of any of the preceding claims, wherein the workpiece support structure comprises a mechanism that is configured to adjust spacing between adjacent ones of the electrodes.

14. The workpiece support structure of any of claims 10 to 12, wherein the first and second electrical contacts of the workpiece support structure are defined at a lower end of the workpiece support structure and are configured to rest on the first and second electrical contacts of the chamber when the workpiece support structure is disposed in the chamber.

15. A workpiece support system, comprising:
the workpiece support structure of any of the preceding claims; and
the first and second sets of electrodes.

16. The workpiece support system of claim 15, wherein each electrode is a conductive plate that is configured to support product thereon during plasma treatment of the product.

17. The workpiece support system of claim 15, wherein each electrode is a product that is to be plasma treated.

18. The workpiece support system of claim 17, wherein each product is a conductive leadframe that includes a plurality of patterned arrangements of electric leads, each patterned arrangement configured to be packaged in a different electrical device.

19. A method of plasma treating product, the method comprising:
accessing a workpiece support structure in a chamber of a plasma treatment system that includes first and second support members that extend along a vertical direction, are offset from one another along a horizontal direction, and are electrically isolated from one another, the first and second support members supporting a plurality of electrodes within a cavity of the workpiece support structure, the electrodes being separated from one another along the vertical direction and extending between the first and second support members along the horizontal direction;

electrically coupling a first electrical contact of the plasma treatment system to the first support member such that a first set of the electrodes is electrically coupled to the first support member and electrically isolated from the second support member;

electrically coupling a second electrical contact of the plasma treatment system to the second support member such that a second set of electrodes, different from the first set, is electrically coupled to the second support member and electrically isolated from the first support member;

operating the plasma treatment system by at least partially evacuating an atmosphere within the chamber, delivering a source gas into the chamber, and supplying power to at least one of the first and second electrical contacts of the plasma treatment system so as to establish a voltage differential between the first and second support members that interacts with source gas to thereby generate a plasma that treats the product.

20. The method of claim 19, comprising a step of inserting the workpiece support structure into the chamber of the plasma treatment system.

21. The method of any of claims 19 and 20, wherein the step of electrically coupling the first and second electrical contacts of the chamber comprises receiving the lower end of the workpiece support structure on the first and second electrical contacts of the chamber.

22. The method of any of claims 19 and 20, wherein:

the step of electrically coupling the first electrical contact of the chamber comprises receiving the lower end of the workpiece support structure on the second electrical contact of the chamber; and

the step of electrically coupling the second electrical contact of the chamber comprises moving the second electrical contact from a first position, wherein the second electrical contact of the chamber is spaced from the workpiece support structure, to a second position, wherein the second electrical contact of the chamber is in contact with the workpiece support structure.

23. The method of any of claims 19 to 22, wherein the operating step comprises evacuating the chamber to a pressure range of between about 3,000 millitorrs and about 6,000 millitorrs.

24. The method of any of claims 19 to 23, wherein each electrode is a conductive leadframe that includes a plurality of patterned arrangements of electric leads, each patterned arrangement configured to be packaged in a different electrical device.