Claims Appendix to Appeal Brief Under Rule 41.37(c)(1)(viii)

1. (Previously Presented) A method of generating ^{4}He atoms and energy, said method comprising:

contacting three dimensional nanostructured carbon material with deuterium; and

transmuting the deuterium to ^{4}He atoms and energy.

2. (Previously Presented) The method of claim 1, wherein ^{4}He is generated in an amount of at least ten ^{4}He atoms per hour per microgram of said three dimensional nanostructured carbon material at 0°C.

3. (Previously Presented) The method of claim 1, wherein said three dimensional nanostructured carbon material comprise multilayer graphite, single walled carbon nanotubes, multiwalled carbon nanotubes, buckyballs, carbon onions, and carbon nanohorns.

4. (Previously Presented) The method of claim 1, wherein said deuterium is in a liquid, gas, plasma, or supercritical phase.

5. (Previously Presented) The method of claim 1, further comprising the removal of from the surface of the three dimensional nanostructured carbon material by heating the three dimensional nanostructured carbon material prior to the contacting step, wherein said heating is performed at conditions sufficient to remove unwanted material from the surface of the three dimensional nanostructured carbon material.

6. (Previously Presented) The method of claim 5, wherein said unwanted materials comprise H_2O, OH, H_2, atomic hydrogen (protium), polymers, oils, amorphous carbon, O_2, solvents, acids, and bases.

7. (Originally Filed) The method of claim 5, wherein said conditions comprise a time up to 18 hours and a temperature up to 400 °C.

8. (Originally Filed) The method of claim 7, wherein said conditions comprise a time ranging from 1 to 8 hours and a temperature ranging from 100 to 250 °C.

9. (Previously Presented) The method of claim 1, wherein said three dimensional nanostructured carbon material comprises carbon nanotubes, and said method further comprises heating the carbon nanotubes at a temperature and for a time sufficient to promote absorption of the deuterium into or onto the carbon nanotubes.

10. (Originally Filed) The method of claim 9, wherein the temperature and time sufficient to promote absorption ranges from 30 °C to 300 °C, and from 30 minutes to 8 hours, respectively.

11. (Previously Presented) The method of claim 1, wherein the step of contacting three dimensional nanostructured carbon material with deuterium is performed at or below room temperature.

12. (Previously Presented) The method of claim 11, wherein the step of contacting three dimensional nanostructured carbon material with deuterium is performed at a temperature ranging from 20 °C to -100 °C.

13. (Previously Presented) The method of claim 1, wherein said three dimensional nanostructured carbon material comprise carbon nanotubes that are functionalized and/or doped with nitrogen.

14. (Originally Filed) The method of claim 1, wherein said ^{4}He atoms have an energy of less than 1 KeV.

15. (Originally Filed) The method of claim 14, wherein said ^{4}He atoms have an energy of less than 100 eV.

16. (Previously Presented) The method of claim 1, wherein said three dimensional nanostructured carbon material are placed in deuterium for a time ranging from 30 minutes to 48 hours.

17. (Previously Presented) The method of claim 16, wherein said three dimensional nanostructured carbon material are placed in deuterium for a time ranging from 1 to 18 hours.

18. (Cancelled)

19. (Previously Presented) A method of generating energy, ^{4}He atoms, or both, said method comprising:

providing three dimensional nanostructured carbon material in a sealable vessel;

evacuating the sealable vessel to a pressure below atmospheric pressure;

adding deuterium gas to said vessel to achieve a pressure above atmospheric pressure; and

heating the vessel to increase the pressure inside the vessel.

20. (Previously Presented) The method of claim 19, wherein ^{4}He is generated in an amount of at least ten ^{4}He atoms per hour per microgram of said three dimensional nanostructured carbon material at 0°C.

21. (Previously Presented) The method of claim 19, further comprising heating the three dimensional nanostructured carbon material prior to adding deuterium gas.

22. (Originally Filed) The method of claim 21, wherein said heating is performed in a sealed chamber and a temperature to bake-out unwanted materials, said method

further comprising evacuating the sealed container to remove the unwanted materials from the sealed container.

23. (Originally Filed) The method of claim 19, wherein said at least one heating step is performed at temperature ranging from 50°C to 500°C for a time ranging from 20 minutes to 6 hours.

24. (Originally Filed) The method of claim 19, wherein said aging is performed at a temperature ranging from 20 °C to -100 °C.

25. (Previously Presented) The method of claim 19, wherein said radiation comprises x-rays, visible light, infrared, microwaves, radio waves or combinations thereof

26. (Previously Presented) The method of claim 19, wherein said three dimensional nanostructured carbon material are placed in deuterium for a time ranging from 1 to 18 hours.

27. (Cancelled)

28. (Previously Presented) A method of generating radiation, said method comprising:

contacting three dimensional nanostructured carbon material with deuterium; and

placing said three dimensional nanostructured carbon material in said deuterium for a time sufficient to generate radiation.

29. (Previously Presented) The method of claim 28, wherein said radiation comprises x-rays, visible light, infrared, microwaves, radio waves or combinations thereof.

30. (Previously Presented) The method of claim 28, wherein said three dimensional nanostructured carbon material comprise, multilayer graphite, single walled carbon nanotubes, multiwalled carbon nanotubes, buckyballs, carbon onions, carbon nanohorns and combinations thereof.

31. (Previously Presented) The method of claim 28, wherein the deuterium is in a liquid, gas, plasma, or supercritical phase.

32. (Previously Presented) The method of claim 28, further comprising the removal of contaminants from the surface of the three dimensional nanostructured carbon material by heating the three dimensional nanostructured carbon material prior to the contacting step, wherein said heating is performed at conditions sufficient to remove unwanted material from the surface of the three dimensional nanostructured carbon material.

33. (Previously Presented) The method of claim 28, wherein said three dimensional nanostructured carbon material comprises carbon nanotubes, and said method further comprises heating the carbon nanotubes prior to aging at a temperature and for a time sufficient to promote absorption of the deuterium into or onto the carbon nanotubes.

34. (Originally Filed) The method of claim 28, wherein said graphene materials comprise carbon nanotubes that are functionalized and/or doped with nitrogen.

35. (Previously Presented) The method of claim 28, wherein said ^{4}He atoms have an energy of less than 1 KeV.

36. (Previously Presented) The method of claim 35, wherein said ^{4}He atoms have an energy of less than 100 eV.

37. (Cancelled)

38. (Canceled)

39. (Previously Presented) A method of inducing nuclear transmutation, comprising the steps of:

contacting three dimensional nanostructured carbon material with deuterium; and

placing said three dimensional nanostructured carbon material in ~~said source of~~ deuterium for a time sufficient to transmute said deuterium and generate primarily a plurality of ^4He atoms and energy.

40. (Previously Presented) The method of claim 39, wherein said three dimensional nanostructured carbon material comprises carbon nanotubes.

41. (Previously Presented) The method of claim 39, wherein said three dimensional nanostructured carbon material further include nitrogen.

42. (Originally Filed) The method of claim 39, wherein said deuterium is a gas.

43. (Originally Filed) A method of producing energy, comprising the steps of:

introducing a gas consisting essentially of D_20 to a material consisting essentially of carbon nanotubes;

applying pressure to the gas; and

generating energy and ^4He atoms.

44. (Previously Presented) A method of producing energy, comprising the steps of:

introducing a material consisting essentially of deuterium to three dimensional nanostructured carbon material to form a combination of deuterium and said three dimensional nanostructured carbon material;

applying pressure to the combination; and

generating energy and ^{4}He atoms.

45. (Previously Presented) The method of claim 44, wherein said three dimensional nanostructured carbon material comprises carbon nanotubes.

46. (Previously Presented) A method of generating energy, comprising:

contacting three dimensional nanostructured carbon material with deuterium; and

transmuting said deuterium to produce a plurality of ^{4}He atoms and energy.

47. (Previously Presented) The method of claim 46, wherein said three dimensional nanostructured carbon material comprises carbon nanotubes.

48. (Previously Presented) The method of claim 46, wherein said deuterium is a gas.