CLAIMS

1. A plasma treatment apparatus, comprising:
   - a housing defining a void;
   - a source of ionised gas plasma in communication with the void; and
   - agitation apparatus arranged to agitate contents of the void in which the apparatus is operable to produce ionised gas plasma with the pressure of a gas from which the ionised gas plasma is formed being 1 atmosphere ± 0.2 atm.

2. The apparatus of claim 1, in which the agitation apparatus comprises part of the housing comprising walls comprising at least one rotating wall.

3. The apparatus of claim 1 or claim 2, in which the source of ionised gas plasma is within the void.

4. The apparatus of claim 3 as it depends from claim 2, in which each rotating wall is arranged for rotation around the source.

5. The apparatus of claim 4, comprising drive means arranged to rotate each rotating wall around the source.

6. The apparatus of claim 4 or claim 5, in which the walls comprise at least one fixed wall which is fixed relative to the source.

7. The apparatus of claim 6, provided with a power conduit for transmitting electric power to the source from outside of the void, comprising an electrical connection passing through a fixed wall.

8. The apparatus of any one of the preceding claims, comprising a power supply for the source, in electrical communication with the source.

9. The apparatus of any one of the preceding claims, in which the agitation apparatus comprises at least one baffle arranged for movement, typically rotational, within the void.

10. The apparatus of any one of the preceding claims, provided with a gas conduit through which a gas can be introduced into the void and optionally a gas exhaust conduit through which the gas can be exhausted from the void.

11. The apparatus of claim 10, provided with a source of visible or ultra-violet radiation, arranged so as to provide the visible or ultra-violet radiation within the void.

12. The apparatus of claim 1 or claim 2, in which the source is outside the void and there is provided a conduit for the ionised gas plasma or for reactive species generated by the ionised gas plasma from the source to the void.

13. The apparatus of any one of the preceding claims, comprising a source of water in communication with the void.

14. The apparatus of claim 13, in which the source of water is a source of plasma activated water.

15. A method of treating a material, comprising placing the material within the void of an apparatus in accordance with any one of the preceding claims, and then causing the source of ionised gas plasma to produce ionised gas plasma whilst also causing the agitation apparatus to agitate the material.

16. The method of claim 15, in which the ionised gas plasma generates reactive species which accumulate in the void.

17. The method of claim 15 or claim 16, in which the material comprises seeds, granular material, plastic beads, biomass, waste water, milk, or water or other material contaminated by pollutants.

18. The method of any one of claims 15 to 17, in which the material comprises seeds and the method results in the disinfection and/or cleaning of the seeds.

19. The method of any one of claims 15 to 18, in which the material comprises seeds and the method results in the promotion of germination of the seeds.

20. The method of claim 19 as it depends from claim 18, in which both the disinfection and/or cleaning of the seeds and the promotion of germination of the seeds occurs over the same period within which the seeds are not removed from the void.

21. The method of claim 18, 20 or claim 19 as it depends from claim 18, in which the method results in the killing of viruses, bacteria, fungus or fungal spores on the seeds.

22. The method of any one of claims 15 to 21, comprising introducing a gas into the void through a gas conduit, and optionally exhausting the gas through the gas exhaust conduit.

23. The method of claim 16, or any one of claims 17 to 22 as they depend from claim 16, in which the reactive species comprise at least one of ozone, Nitric Oxide (NO), Hydrogen Peroxide (H2O2), Hydroxyl radicals (OH), Hydron ions (H+), Nitrate ions (NO3-), Nitrite ions (NO2-) and Oxygen atoms (O).

24. The method of any one of claims 15 to 23, in which the apparatus is in accordance with claim 13 and in which the method comprises adding water to the void so as to generate plasma activated water within the void.