Claims

1. A disinfection apparatus for treating waste comprising:

a housing having an inlet and an outlet;

a conveying mechanism which is disposed within the housing and which extends at least substantially along a length of the housing from the inlet to the outlet; and

a heating mechanism configured to transfer heat to the housing so as to heat an internal space of the housing to create a heated environment within the housing,

wherein the heating mechanism comprises one or more heating elements directly coupled to the housing,

wherein the one or more heating elements are wrapped around the housing and lined along the length of the housing.

2. The disinfection apparatus as claimed in claim 1, wherein the housing is elongated in shape, and wherein the inlet is disposed at a longitudinal end portion of the elongated housing and the outlet is disposed at an opposite longitudinal end portion of the elongated housing.

3. The disinfection apparatus as claimed in claim 2, wherein the inlet of the housing and the outlet of the housing are facing opposite directions.

4. The disinfection apparatus as claimed in any one of claims 1 to 3, wherein the conveying mechanism comprises a screw conveyor mechanism, or a bucket conveyor mechanism, or a drag chain conveyor mechanism, or a belt conveyor mechanism, or a wire mesh conveyor mechanism, or a roller conveyor mechanism, or a spiral conveyor mechanism.

5. The disinfection apparatus as claimed in any one of claims 1 to 3, wherein the conveying mechanism comprises a screw conveyor mechanism, the screw conveyor mechanism comprising a screw having a shaft with a helical blade or a spiral blade.

6. The disinfection apparatus as claimed in claim 5, wherein the screw of the screw conveyor mechanism extends at least substantially along the length of the housing from the inlet to the outlet.

7. The disinfection apparatus as claimed in claim 5 or 6, wherein the screw is configured in terms of a pitch of the helical blade of the screw, a length of the helical blade of the screw and a rotational speed of the screw.

8. The disinfection apparatus as claimed in claim 1, wherein the one or more heating elements comprises a band heater, or a heater pad, or a heater plate, or a heating net, or a heater coil, or a heater wire, or a heater rod, or a heater fin, or any combination thereof.

9. The disinfection apparatus as claimed in any one of claims 1 to 8, further comprising an air vent at the housing.

10. The disinfection apparatus as claimed in any one of claims 1 to 9, further comprising a hopper coupled to the inlet of the housing.

11. The disinfection apparatus as claimed in claim 10, wherein the hopper comprises a funnel-shaped structure, or a trapezium-shaped structure.

12. The disinfection apparatus as claimed in any one of claims 1 to 11, further comprising:

one or more temperature sensors configured to measure a temperature of the internal space of the housing; and

a controller electrically coupled to the one or more temperature sensors, the heating mechanism and the conveying mechanism.

13. The disinfection apparatus as claimed in claim 12, wherein the controller is configured to control the heating mechanism based on feedback from the one or more temperature sensors to control the temperature of the internal space of the housing.

14. The disinfection apparatus as claimed in claim 13, wherein the controller is configured to control the heating mechanism to maintain the temperature of the

internal space of the housing at a predetermined temperature to maintain the heated environment within the housing.

15. The disinfection apparatus as claimed in claim 13 or 14, wherein the controller is configured to control the conveying mechanism to repeatedly move in a first direction and in a second opposite direction based on a predetermined sequence.

16. The disinfection apparatus as claimed in claim 14, wherein the controller is configured to activate the conveying mechanism after the internal space of the housing is maintained at the predetermined temperature for a predetermined period of time.

17. The disinfection apparatus as claimed in claim 15 or 16, wherein the controller is configured to maintain the internal space of the housing at the predetermined temperature while the conveying mechanism is in operation.

18. A method of treating waste, optionally using a disinfection apparatus according to any one of claims 1 to 17, the method comprising:

providing the waste in a heated environment within a housing of a disinfection apparatus; and

conveying the waste in the heated environment, via a conveying mechanism of the disinfection apparatus, along a length of the housing of the disinfection apparatus.

19. The method as claimed in claim 18, further comprising heating, via a heating mechanism of the disinfection apparatus, the housing so as to heat an internal space of the housing to create the heated environment within the housing.

20. The method as claimed in claim 18 or 19, wherein the heated environment is at a temperature of at least 70°C.

21. The method as claimed in any one of claims 18 to 20, further comprising holding the waste in the heated environment within the housing for a predetermined period of time before conveying the waste along the length of the housing.

22. The method as claimed in any one of claim 18 to 20, wherein conveying the waste comprises repeatedly moving the waste in a first longitudinal direction and in a second opposite longitudinal direction along the housing based on a predetermined sequence or a predetermined period of time.

23. The method as claimed in any one of claims 18 to 22, wherein conveying the waste comprises conveying the waste along a length of the housing from an inlet region of the housing to an outlet region of the housing to discharge the waste from the housing via the outlet.

24. The method as claimed in claim 23, further comprising heating the housing so as to maintain the heated environment within the housing as the waste is being conveyed along the length of the housing from the inlet region of the housing to the outlet region of the housing for discharging the waste through the outlet of the housing.