Claims

1. A device for preparation of infusion fluid comprising:

a first portion comprising:

a fluid conduit comprising electrically conductive material with non-zero resistance;

a second portion selectively couplable and decouplable to the first portion, in the field, and comprising:

at least one sensor for sensing a property of fluid within said fluid conduit and/or of said conduit;

a power source comprising a power supply and/or connectivity to an external power supply;

wherein mechanical coupling of said first portion to said second portion electrically connects said fluid conduit to said power source.

2. The device according to claim 1, wherein said fluid conduit is elongated, having a shape including one or more changes in direction and following a path around an internal volume.

3. The device according to claim 2, wherein said fluid conduit is a coil of tubing, said fluid conduit coiling around said internal volume.

4. The device according to claim 2 or claim 3, wherein said second portion includes a body sized and shaped to fit into said internal volume and wherein said mechanical coupling comprises inserting said body into said internal volume.

5. The device according to claim 4, wherein said body fits into said internal volume through an opening to said internal volume and wherein said second portion includes a base portion larger than said opening.

6. The device according to any of claims 1-5, comprising at least one connector mechanically connecting the fluid conduit of the first portion with said second portion, and electrically connecting said electrically conductive material of said fluid conduit to said power source of said second portion.

7. The device according to claim 6, wherein said at least one connector comprises two connector parts, a first connector part, and a second connector part, wherein said first portion comprises said first connector part and said second portion comprises said second connector part.

8. The device according to any one of claims 6-7, wherein said electrical connector comprises a portion configured to be slid onto said fluid conduit.

9. The device according to claim 8, wherein said portion comprises an electrical contact between said connector and said conduit.

10. The device according to claim 8 or claim 9, wherein said portion comprises a lumen sized and shaped to receive said conduit and form electrical contact with said conduit.

11. The device according to any of claims 8-10, wherein said portion is a loop which extending around at least 50% of a circumference of said conduit.

12. The device according to any of claims 1-11, wherein said at least one sensor comprises a non-contact sensor, a non-contact infrared (IR) temperature sensor or a contact temperature sensor.

13. The device according to any of claims 1-12, wherein said second portion comprises a housing, wherein said at least one sensor is disposed within said second portion housing, wherein upon connecting of said first portion to said second portion said at least one sensor is positioned, adjacent to a portion of said conduit.

14. The device according to any of claims 1-13, comprising a processor configured to:

receive a measurement signal from said at least one sensor; and

generate control signals to control said power supply, based on said measurement signal.

15. The device according to claim 14, wherein the processor is configured to control the fluid conduit temperature while fluid flows through the conduit.

16. The device according to any of claims 1-15, comprising a microswitch activated by coupling of said first portion and said second portion.

17. The device according to claim 16, wherein said microswitch is housed within a removable portion of said second portion with electrical contacts of said second portion.

18. The device according to any of claims 1-17, wherein said first and second portions are configured for a fast pressure-based connection to provide said mechanical coupling and electrical connection.

19. The device according to any of claims 8-18, wherein said second portion comprises said at least one connector , wherein said at least one connector comprises an elastic clip sized and shaped to directly and stably clamp on said conduit.

20. The device according to any of claims 8-19, wherein the at least one electrical connector comprises: a first electrical connector attached to a first portion of said fluid conduit;

a second electrical connector attached to a second portion of said fluid conduit, said fluid conduit forming an electrically conductive path between said first portion and said second portion.

21. A method of infusion fluid preparation comprising:

attaching a fluid conduit section comprising electrically conductive material to a power supply section thereby mechanically coupling and electrically connecting said fluid conduit to a power supply, current provided by said power supply heating said fluid conduit;

supplying infusion fluid to an inlet of said fluid conduit;

sensing said fluid conduit using one or more non-contact sensor separated from said fluid conduit to provide a measurement signal; and

controlling said power supply, based on said measurement signal.

22. An electrical connector for connection of an infusion conduit to a power supply comprising:

a loop sized and shaped to extend around and contact a portion of a tubular infusion conduit;

a first contact extending from a first side of said loop; and

a second contact extending from a second side of said loop.

23. A disposable component of an infusion heater, comprising:

a folded sterile fluid conduit comprising electrically conductive material;

a first connector for a medical tubbing attached to a first end of said fluid conduit; and

a second connector for a medical tubbing attached to a first end of said fluid conduit,

wherein said fluid conduit defines at least two designated locations for mechanical and electrical engagement thereof, each with an axial length of over 0.5 cm.

24. A base of an infusion device comprising:

temperature control circuitry;

a power supply or connectivity to a power supply; and

at least one connector configured to stably and directly and reversibly engage a heating conduit and provide both mechanical engagement and delivery of power for heating from said power supply to said conduit.