What is Claimed:

1. A method for preparing an electroporation device for delivering an electroporation treatment, comprising:

delivering a charge current from at least one battery through a charge circuit to a supercapacitor unit;

charging the supercapacitor unit with the charge current, wherein the charging step comprises:

measuring one or more input parameters of the charge current while the charge current is in at least one charge state of a plurality of charge states of charging the supercapacitor unit; and

at least one step of transitioning the charge current between charge states of the plurality of charge states responsive to the one or more measured input parameters, wherein transitioning the charge current comprises adjusting a magnitude of the charge current,

wherein the measuring and transitioning steps are automatically controlled by a control unit executing machine-readable instructions.

2. The method of claim 1, wherein:

the at least one battery is selected from the group comprising Alkaline, NiMH, and Li-Ion batteries; and

optionally, wherein the at least one battery comprises a pair of batteries selected from the group comprising Alkaline and NiMH batteries.

3. The method of claim 1, wherein:

the one or more input parameters is selected from the group comprising: a battery voltage measured at a first location, a change in the battery voltage when a charge load is applied to the at least one battery, a first boosted voltage measured at a second location between the at least one battery and the supercapacitor unit, a second boosted voltage measured at a third location between the second location and the supercapacitor unit, and a charging duration, and

the method further comprises determining whether the one or more measured input parameters satisfies a condition statement for triggering the at least one transitioning step.

4. The method of claim 3, wherein:

the plurality of charge states comprises a set of primary charge states that includes:

a first primary charge state, in which the electric current is substantially maintained at a first current value, and

a second primary charge state, in which the electric current is substantially maintained at a second current value that is less than the first current value; and

when the transitioning step comprises transitioning the charge current from one charge state to another charge state that are both in the set of primary charge states, the adjusting step comprises decreasing the electric current.

5. The method of claim 4, wherein the at least one transitioning step comprises transitioning the charge current from the first primary charge state to the second primary charge state, thereby adjusting the electric current from the first current value to the second current value.

6. The method of claim 5, wherein the first current value is in a range from about 1000 mAmps to about 3000 mAmps, and the second current value is in a range from about 300 mAmps to about 600 mAmps.

7. The method of claim 4, further comprising boosting a voltage of the charge current from the battery voltage to the first boosted voltage, wherein the boosting step is performed by a first voltage boost regulator of the charge circuit, wherein the first boost regulator is located at or upstream of second location.

8. The method of claim 7, further comprising further boosting the voltage of the charge current from the first boosted voltage to the second boosted voltage, wherein the further boosting step is performed by a second voltage boost regulator of the charge circuit, wherein the second boost regulator is located either at the third location or intermediate the second and third locations.

9. The method of claim 8, wherein the battery voltage is in a range from about 0.5 volts to about 3.0 volts, the first boosted voltage is in a range from about 3.0 volts to about 7.0 volts, and the second boosted voltage is in a range from about 7.0 volts to about 20 volts.

10. The method of claim 8, wherein the measuring step comprises:
sampling the battery voltage at the first location at a sample interval; and
sampling the first boosted voltage at the second location at the sample interval.

11. The method of claim 10, wherein the sample interval is in a range from about 0.1 milliseconds to about 1.0 second.

12. The method of claim 10, wherein:
the control unit obtains the measured battery voltage samples and the measured first and second boosted voltage samples and calculates an average value of the first boosted voltage, and
the one or more input parameters include the battery voltage and the average value of the first boosted voltage.

13. The method of claim 4, wherein the at least one transitioning step comprises transitioning the charge current from one of the primary charge states to a top-off charge state after the supercapacitor unit reaches a full charge level.

14. The method of claim 13, further comprising, concurrent with the step of transitioning the charge current to the top-off charge state, communicating an indication signal indicating that the device is treatment ready, wherein the supercapacitor unit has a voltage in a range of about 11.5 volts to about 12.5 volts when at the full charge level.

15. The method of claim 4, wherein:

the plurality of charge states includes an initial charge state, in which the measured one or more input parameters includes the battery voltage and no charge current is delivered to the supercapacitors, and

the at least one transitioning step comprises transitioning the charge current from the initial charge state to the first primary charge state,

the adjusting step comprises adjusting the charge current from an initial electric current value of substantially zero to the first current value, and

the method further comprises determining whether the measured battery voltage equals or exceeds a threshold voltage value prior to the at least one transitioning step.

16. The method of claim 4, wherein, in each of the primary charge states, the respective electric current value is maintained for at least a respective predetermined duration:

until either (1) the supercapacitor unit reaches the full charge level, or (2) the charging duration exceeds a respective duration limit associated with the respective primary charge state;

unless at least one of the one or more input parameters satisfies a threshold limit that triggers a transition to an abort state of the plurality of charge states before the supercapacitor unit reaches the full charge level or before the charging duration exceeds the respective duration limit.

17. The method of claim 16, wherein:

the at least one transitioning step comprises transitioning the charge current from one of the first and second primary charge states to the abort state responsive to (1) the charging duration exceeding the respective duration limit or (2) the control unit determines that the at least one of the one or more input parameters satisfies the threshold limit, and

the adjusting step comprises adjusting the respective electric current value substantially to zero.

18. The method of claim 4, wherein the set of primary charge states further comprises a third primary charge state, in which the magnitude of the charge current is substantially maintained at a third current value that is less than the second current value, wherein the third current value is in a range from about 150 mAmps to about 300 mAmps.

19. The method of claim 18, wherein the at least one transitioning step further comprises:

transitioning the charge current from the second primary charge state to the third primary charge state, thereby adjusting the magnitude of the charge current from the second current value to the third current value; and

transitioning the charge current from the third primary charge state to a top-off charge state after the supercapacitor unit reaches a full charge level.

20. The method of claim 18, wherein:

the one or more input parameters includes charging duration, and

the method further comprises:

maintaining the electric current at the third current value for at least a predetermined duration until either (1) the supercapacitor unit reaches the full charge level, or (2) the charging duration exceeds a duration limit associated with the third primary charge state,

determining that the charging duration exceeded the duration limit, and

responsively transitioning the charge current to an abort state of the plurality of charge states, thereby adjusting the electric current from the third electric current value substantially to zero.

21. The method of claim 1, further comprising communicating indication signals to a user, wherein each of the indication signals indicates a transition between charge states,

wherein the step of communicating indication signals comprises communicating optical indication signals to at least one LED display and *optionally* comprises communicating at least one audible indication signal to a speaker carried by the electroporation device.

22. A power supply unit for an electroporation device, comprising:

a battery unit configured to connect interchangeably to a first type of battery and a second type of battery;

an energy storage unit that is configured to be charged interchangeably by the first type of battery and the second type of battery, wherein the energy storage unit is further configured to discharge a total energy of at least about 30 Joules;

an integrated circuit configured to execute computer readable instructions; and

a charge circuit in electrical communication with the battery unit and the energy storage unit, wherein the charge circuit is operable under control of the integrated circuit such that:

the charge circuit is configured to measure one or more input parameters of a charge current drawn from the battery unit, and

the charge circuit is further configured to adjust a magnitude of the charge current responsive to the measured one or more input parameters while charging the energy storage unit with the charge current.

23. The power supply unit of claim 22, wherein the first and second types of batteries are selected from the group comprising alkaline, NiMH, and lithium-ion.

24. The power supply unit of claim 23, wherein:

the first type of battery is alkaline and the second type of battery is NiMH,

the battery unit is configured to connect to a pair of the first type of batteries interchangeably with a pair of the second type of batteries, and the battery unit connects each respective pair of batteries in series, and

the integrated circuit is configured to estimate an initial charge level of the respective first type of battery or the second type of battery connected to the battery unit, and the integrated circuit is further configured to reduce the magnitude of the charge current responsive to the estimated initial charge level.

25. The power supply unit of claim 22, wherein the energy storage unit comprises a plurality of supercapacitors connected in series.

26. The power supply unit of claim 22, wherein the charge circuit includes at least one sample location at which at least one of the one or more input parameters are measured, and the at least one sample location is in electronic communication with the integrated circuit.

27. The power supply unit of claim 26, wherein the charge circuit comprises at least one voltage boost regulator between the battery unit and the energy storage unit, wherein the at least one voltage boost regulator is configured to boost a voltage of the charge current to a boosted voltage.

28. The power supply unit of claim 27, wherein the at least one voltage boost regulator comprises:

a first voltage boost regulator at a first location in the charge circuit, wherein the first voltage boost regulator is configured to boost the voltage of the charge current from an initial battery voltage to a first boosted voltage; and

a second voltage boost regulator at a second location in the charge circuit, wherein the second location is between the first location and the energy storage unit, and the second voltage boost regulator is configured to boost the voltage of the charge current from the first boosted voltage to a second boosted voltage, wherein the second boosted voltage is substantially equivalent to a charge voltage at which the energy storage unit is charged.

29. The power supply unit of claim 28, wherein:

the first boosted voltage is in a range of about 2.0 volts to about 10.0 volts, and the second boosted voltage is in a range from about 5.0 volts to about 20 volts; and

wherein the charge circuit comprises:

a first sample location between the battery unit and the first voltage boost regulator, wherein the initial battery voltage is measured at the first sample location; and

a second sample location between the first voltage boost regulator and the second voltage boost regulator, wherein the first boosted voltage is measured at the second sample location,

wherein the first and second sample locations are in electronic communication with the integrated circuit.

30. The power supply unit of claim 22, wherein:

the power supply unit is insertable within a device housing of the electroporation device, and

the battery unit comprises a battery housing that is insertable at least partially within the device housing, the battery housing having at least one battery receptacle configured to receive, interchangeably, the first type of battery and the second type of battery.

31. The power supply unit of claim 30, wherein the at least one battery receptacle comprises a first battery receptacle and a second battery receptacle, wherein the first and second battery receptacles are each configured to receive a pair of the first type of battery interchangeably with a pair of the second type of battery.

32. The power supply unit of claim 30, further comprising at least one indicator device for indicating a charge status of the energy storage unit,

wherein the at least one indicator device comprises an LED display for communicating one or more optical signals regarding the charge status of the energy storage unit, and the LED display is receivable within an aperture of the device housing, and

wherein the at least one indicator device comprises a second LED display for communicating one or more optical signals indicating when the energy storage unit is fully charged.

33. The power supply unit of claim 30, wherein the charge circuit is disposed on a circuit board insertable within the device housing, and the energy storage unit is mountable to the circuit board, and the battery housing is connectable to the circuit board, wherein the battery housing has at least one electrical contact connectable with at least one electrical contact of the circuit board for providing electronic communication between the battery unit and the charge circuit.

34. The power supply unit of claim 30, wherein the battery housing includes an electronic communication port for receiving an electronic communication device, and the battery housing carries an LED display for indicating when the electronic communication port is coupled to a cable.

35. The power supply unit of claim 22, wherein the energy storage unit is configured to discharge a total energy of about 90 Joules, and the energy storage unit is configured to discharge discrete portions of the total energy, and the discrete portions are convertible into one or more electroporation pulses.

36. A handheld electroporation device, comprising:

a device housing;

at least one electrode connectable to the device housing;

a battery unit at least partially insertable within the device housing, the battery unit configured to connect interchangeably to a first type of battery and a second type of battery;

a supercapacitor unit that is configured to be charged interchangeably by the first type of battery and the second type of battery, wherein the supercapacitor unit is further configured to discharge a total energy of at least about 30 Joules;

a charge circuit in electrical communication with the battery unit and the supercapacitor unit, the charge circuit configured to deliver a charge current from the battery unit to the supercapacitor unit for charging the supercapacitor unit,

wherein, under control of an integrated circuit configured to execute machine readable instructions, the charge circuit is configured to measure at least one voltage parameter of the respective first type of battery or second type of battery and to responsively adjust a magnitude of charge current to thereby reduce a rate at which the respective first type of battery or second type of battery loses charge while charging the supercapacitor unit.