**CLAIMS**

1. An electrosurgical handpiece, comprising:

a housing for a temperature sensor, wherein the housing defines a first patient-contact surface, an inner surface positioned opposite the first patient-contact surface, and an outer wall extending transversely relative to the first patient-contact surface;

a temperature sensor thermally coupled with the inner surface of the housing;

an energizable electrode defining a second patient-contact surface extending outward of the outer wall of the housing; and

an insulator positioned between the energizable electrode and the housing for the temperature sensor to inhibit thermal conduction between the energizable electrode and the housing for the temperature sensor.

2. ~~An~~ The electrosurgical handpiece according to claim 1, further comprising a shaft extending proximally from the energizable electrode and defining an internal bore extending longitudinally of the shaft, wherein the insulator extends from a distal end positioned adjacent the first patient-contact surface and the second patient-contact surface to a proximal end positioned within the internal bore.

3. ~~An~~ The electrosurgical handpiece according to claim 2, wherein the internal bore defines a first thread and the insulator defines a second thread, wherein the first and second threads are complementary and matingly engageable with each other.

4. ~~An~~ The electrosurgical handpiece according to claim 1, further comprising an electrical conductor extending proximally within the handpiece from the temperature sensor.

5. ~~An~~ The electrosurgical handpiece according to claim 1, wherein the first patient-contact surface and the second patient-contact surface are co-centrically aligned with each other.

6. ~~An~~ The electrosurgical handpiece according to claim 1, wherein the temperature sensor comprises one or more of a thermocouple, a resistance-temperature detector, a thermistor, and a diode.

7. ~~An~~ The electrosurgical handpiece according to claim 1, wherein the housing for the temperature sensor comprises a material having a thermal conductivity equal to or greater than about 200 W/mK.

8. ~~An~~ The electrosurgical handpiece according to claim 1, wherein the electrode comprises a dielectric coating defining the second patient contact surface.

9. ~~An~~ The electrosurgical handpiece according to claim 8, the dielectric material having a dielectric constant of between about 4 to about 12 at an operating frequency of the energizable electrode.

10. ~~An~~ The electrosurgical handpiece according to claim 9, wherein the operating frequency of the energizable electrode is between about 3-30 MHz.

11. ~~An~~ The electrosurgical handpiece according to claim 8, the dielectric material coating having a substantially even thickness of about 0.004 to about 0.020 inches.

12. ~~An~~ The electrosurgical handpiece according to claim 1, further comprising:

a communication component configured to receive a temperature measured by the temperature sensor and to communicate the received temperature to a control system.

13. ~~An~~ The electrosurgical handpiece according to claim 1, wherein the first patient-contact surface has a larger surface area than a surface area of the temperature sensor that is coupled to the housing.

14. ~~An~~ The electrosurgical handpiece according to claim 1, wherein the energizeable electrode is capacitively coupled.

~~15. An electrosurgical handpiece, comprising:~~

~~an energizable electrode comprising a metal foil enclosing a volume and defining a patient-contact surface; and~~

~~a temperature sensor disposed in the volume and thermally coupled with the patient contact surface.~~

~~16. An electrosurgical handpiece according to claim 15, wherein the volume contains a gas.~~

~~17. An electrosurgical handpiece according to claim 15, wherein the volume contains a low thermal mass solid.~~

~~18. An electrosurgical handpiece according to claim 17, wherein the low thermal mass solid comprises one or more of: a solid plastic, or a fiber insulation.~~

~~19. An electrosurgical system, comprising:~~

~~a generator configured to combine a first current waveform having a corresponding first frequency, a first amplitude, and a first pulse-width with a second current waveform having a corresponding second frequency, a second amplitude, and a second pulse-width to define a blended waveform output; and~~

~~a control system configured to control one or more of the first frequency, the first amplitude, the first pulse-width, the second frequency, the second amplitude and the second pulse-width responsive to a received temperature.~~

~~20. An electrosurgical system according to claim 19, wherein one or more of the first frequency, the first amplitude, the first pulse-width, the second frequency, the second amplitude and the second pulse-width are user selectable.~~

~~21. An electrosurgical system according to claim 19, further comprising a handpiece having an energizable electrode to deliver energy corresponding to the blended waveform output to a patient-treatment site.~~

~~22. An electrosurgical system according to claim 21, the handpiece further comprising a temperature sensor configured to output a temperature of the patient-treatment site.~~

~~23. An electrosurgical system according to claim 22, wherein the received temperature corresponds to an output from the temperature sensor.~~

~~24. An electrosurgical system according to claim 21, wherein the handpiece comprises:~~

~~a temperature sensor and an associated first patient-contact surface;~~

~~wherein the energizable electrode defines a second patient-contact surface positioned outward of the first patient-contact surface, wherein the second patient-contact surface is configured to deliver the blended waveform output to a treatment site.~~

~~25. An electrosurgical system according to claim 24, wherein the handpiece comprises:~~

~~a housing for the temperature sensor, wherein the housing defines the first patient contact surface positioned relative to the second patient contact surface to observe a temperature of the treatment site; and~~

~~an insulator positioned between the energizable electrode and the housing for the temperature sensor to inhibit thermal conduction between the energizable electrode and the housing for the temperature sensor.~~

~~26. An electrosurgical system according to claim 19, further comprising:~~

~~a first adjustable power source configured to generate the first current waveform;~~

~~a second adjustable power source configured to generate the second current waveform; and~~

~~a radio-frequency amplifier configured to blend the first and second current waveforms.~~

~~27. An electrosurgical system according to claim 26, wherein the first adjustable power source comprises a first adjustable buck and a first power switch, wherein the second adjustable power source comprises a second adjustable buck and a second power switch; wherein each adjustable buck sets an output voltage level for its respective adjustable power source.~~

~~28. An electrosurgical system according to claim 26, wherein the first current waveform causes the energizeable electrode to deliver energy to cut tissue at a treatment site and wherein the second current waveform causes the energizeable electrode to deliver energy to coagulate tissue at a treatment site.~~

~~29. An electrosurgical system according to claim 28, wherein the blended waveform causes the energizeable electrode to deliver energy to combine cutting and coagulation at the treatment site.~~

~~30~~15. An electrosurgical system, comprising:

an electrosurgical generator configured to output a radio-frequency (RF) waveform; and

~~an~~ the electrosurgical handpiece of claim 1, ~~comprising: temperature sensor and an associated a first patient-contact surface; and an~~ wherein the energizable electrode of the electrosurgical handpiece is ~~defining a second patient-contact surface positioned outward of the first patient-contact surface and~~ configured to output the RF waveform received from the electrosurgical generator.

~~31~~16. ~~An~~ The electrosurgical system according to claim ~~30~~15, wherein the electrosurgical generator further comprises:

a control system configured to receive a temperature measurement from the temperature sensor, compare the received temperature to a threshold temperature, and to modify the output waveform in response to the comparison.

~~32~~17. ~~An~~ The electrosurgical system according to claim ~~30~~15, wherein the electrosurgical generator further comprises:

a generator configured to combine a first current waveform having a corresponding first frequency, a first amplitude, and a first pulse-width with a second current waveform having a corresponding second frequency, a second amplitude, and a second pulse-width to define a blended waveform output; and

a control system configured to control one or more of the first frequency, the first amplitude, the first pulse-width, the second frequency, the second amplitude and the second pulse-width responsive to a temperature received from the temperature sensor.

~~33~~18. ~~An~~ The electrosurgical system according to claim ~~32~~17, wherein the electrosurgical generator further comprises:

a first power source configured to generate the first current waveform;

a second power source configured to generate the second current waveform; and

a radio-frequency amplifier configured to blend the first and second current waveforms to define a blended waveform and to output the blended waveform to the electrosurgical handpiece.

~~34. An electrosurgical system according to claim 30, wherein the electrosurgical handpiece comprises an insulator positioned between the energizable electrode and the temperature sensor to inhibit thermal conduction between the energizable electrode and the temperature sensor.~~

~~35. A method of treatment, comprising:~~

~~placing an electrosurgical handpiece in contact with a treatment surface;~~

~~causing the electrosurgical handpiece to emit a radio-frequency (RF) signal for a selected duration, wherein the treatment surface is heated in correspondence with the RF signal and the selected duration;~~

~~measuring, with the electrosurgical handpiece, a temperature of the treatment surface;~~

~~communicating the measured temperature to a control system; and~~

~~receiving, from the control system, a control signal responsive to the measured temperature.~~

~~36. A method of treatment according to claim 35, further comprising:~~

~~moving the electrosurgical handpiece over the treatment surface to contact different regions of the treatment surface.~~

~~37. A method of claim 36, comprising moving the electrosurgical handpiece over the treatment surface continuously for the selected duration.~~

~~38. A method of treatment according to claim 35, further comprising:~~

~~applying a topical solution to the treatment surface before placing the electrosurgical handpiece in contact with the treatment surface.~~

~~39. A method of treatment according to claim 38, wherein the topical solution is an ultrasound gel.~~

~~40. A method of treatment according to claim 35, wherein the treatment surface is human skin, and wherein one or more of a dermal layer, an epidermal layer, or a deep tissue layer is heated.~~

~~41. A method of treatment according to claim 35, wherein the treatment surface is heated to a range of about 39C-46C.~~

~~42. A method of treatment according to claim 35, wherein the treatment time period is between about 5 minutes to about 50 minutes.~~

~~43. A method of treatment according to claim 35, wherein the control signal received from the control system causes a termination of the RF signal.~~

~~44. A method of treatment according to claim 35, wherein the control signal received from the control system causes a re-engagement of the RF signal.~~

~~45. A method of treatment according to claim 35, further comprising:~~
~~causing the electrosurgical handpiece to emit a sinusoidal RF energy.~~

~~46. A method of treatment, comprising:~~
~~causing an electrosurgical handpiece to emit a radio-frequency (RF) signal for a selected duration;~~
~~receiving from the electrosurgical handpiece a temperature of a treatment surface in contact with the electrosurgical handpiece;~~
~~comparing the received temperature to a threshold temperature;~~
~~terminating the RF signal when the received temperature is equal to or higher than the threshold temperature; and~~
~~re-engaging or continuing the RF signal emission when the received temperature is lower than the threshold temperature.~~

~~47. A method of treatment according to claim 46, further comprising:~~
~~receiving a user selection of a value for one or more of a first frequency, a first amplitude, a first pulse-width, a second frequency, a second amplitude, and a second pulse-width; and~~
~~causing the electrosurgical handpiece to emit a RF signal comprising a waveform blended from a first current waveform having the first frequency, the first amplitude, and the first pulse-width and a second current waveform having the second frequency, the second amplitude, and the second pulse-width.~~

~~48. A method of treatment, comprising:~~
~~placing an electrosurgical handpiece in contact with a treatment surface;~~

~~receiving a user selection of a value for one or more of a first frequency, a first amplitude, a first pulse-width, a second frequency, a second amplitude, and a second pulse-width; and~~

~~causing the electrosurgical handpiece to emit a radio-frequency (RF) signal comprising a waveform blended from a first current waveform having the first frequency, the first amplitude, and the first pulse-width and a second current waveform having the second frequency, the second amplitude, and the second pulse-width.~~

~~49. A method of treatment according to claim 48, wherein the first current waveform is configured to cause the electrosurgical handpiece to cut the treatment surface and the second current waveform is configured to cause the electrosurgical handpiece to coagulate the treatment surface.~~

~~50. A method of treatment according to claim 49, wherein the blended waveform is configured to cause the electrosurgical handpiece to combine cutting and coagulation on the treatment surface.~~

~~51. A method of treatment according to claim 48, further comprising:~~

~~receiving, at the electrosurgical handpiece, the blended waveform from an electrosurgical generator.~~

~~52. A method of treatment according to claim 48, further comprising:~~

~~measuring a temperature of the treatment surface with the electrosurgical handpiece; and~~

~~controlling one or more of the first frequency, the first amplitude, the first pulse-width, the second frequency, the second amplitude, and the second pulse-width responsive to the measured temperature.~~