CLAIMS

1. A treatment device for providing a magnetic treatment and a radiofrequency treatment to a body area of a patient, comprising:

an energy storage device for storing electrical energy;

a magnetic field generating device;

a switching device configured to discharge the electrical energy from the energy storage device to the magnetic field generating device, such that a time-varying magnetic field is generated and causes contraction of a muscle in the body area of the patient;

wherein the time-varying magnetic field has a magnetic flux density in a range of 0.1 T to 7 T and repetition rate in a range of 1 Hz to 700 Hz; and

a radiofrequency electrode comprising a plurality of openings configured such that induction of eddy currents in the radiofrequency electrode caused by the time-varying magnetic field is minimized, wherein the radiofrequency electrode is configured to generate radiofrequency waves to heat tissue in the body area of the patient, and

wherein a ratio of a perimeter of the radiofrequency electrode to an area of the radiofrequency electrode is in a range of 150 m-1 to 20,000 m-1.

2. The device of claims 1, wherein the magnetic field generating device and the radiofrequency electrode are separated by an electrically insulating material.

3. The device of claim 1 or 2, wherein the magnetic field generating device further comprises an air core.

4. The device of any one of claims 1 to 3, wherein the plurality of openings are located

between the body area of the patient and the magnetic field generating device, and wherein the number of openings located between the body area of the patient and the magnetic field generating device is in a range of 10 to 600.

5. The device of any one of claims 1 to 4, wherein the plurality of openings includes an electrically insulating material or a dielectric material disposed within an opening of the plurality of openings.

6. The device of any one of claims 1 to 5, wherein a magnetic flux density measured on a surface of the radiofrequency electrode during the treatment is in a range of 0.1 T to 5 T.

7. The device of any claims 1 to 6, wherein a shortest distance between the magnetic field generating device and the radiofrequency electrode is in a range of 0.1mm to 100 mm.

8. A device for providing a magnetic treatment and a radiofrequency treatment to a body area of a patient, comprising:

an energy storage device for storing electrical energy;

a magnetic field generating device;

a radiofrequency electrode comprising a plurality of cutouts in a conductive area of the radiofrequency electrode, wherein the radiofrequency electrode is configured to generate radiofrequency waves to heat tissue of the patient;

wherein a shortest distance between a point along a perimeter of a first cutout of the plurality of cutouts and a point along a perimeter of a second cutout of the plurality of cutouts is in a range of 0.1 mm to 50 mm; and

a control system configured to cause the magnetic field generating device to generate a time-varying magnetic field having a magnetic flux density in a range of 0.1 T to 7 T and repetition rate in a range of 1 Hz to 700 Hz that causes a contraction of a muscle in the body area of the patient;

wherein the control system is configured to cause the radiofrequency electrode to generate the radiofrequency waves to heat tissue of the patient.

9. The device of claim 8, wherein a number of cutouts in the plurality of cutouts is in a range of 10 to 600.

10. The device of claims 8 or 9, wherein a magnetic flux density measured on the plurality of cutouts during the magnetic treatment is in a range of 0.1 T to 5 T.

11. The device of any one of claims 8 to 10, wherein the radiofrequency electrode is a bipolar radiofrequency electrode.

12. The device of any one of claims 8 to 11, wherein the magnetic field generating device further comprises a flat coil with an air core.

13. The device of any one of claims 8 to 12, wherein a ratio of a perimeter of the radiofrequency electrode to an area of the radiofrequency electrode is in a range of 150 m-1 to 20,000 m-1.

14. The device of any one of claims 8 to 13, wherein an electrically insulating material or a dielectric material is disposed within a cutout of the plurality of cutouts.

15. The device of any one of claims 8 to 14, further comprising an applicator, wherein the magnetic field generating device and the radiofrequency electrode are arranged within the applicator.

16. A treatment device for providing a magnetic treatment and a radiofrequency treatment to a body area of a patient, comprising:

an energy storage device for storing electrical energy;

a magnetic field generating device;

a switching device configured to discharge the electrical energy from the energy storage device to the magnetic field generating device in order to generate a time-varying magnetic field comprising a magnetic flux density in a range of 0.1 T to 7 T and a repetition rate in a range of 1 Hz to 700 Hz to cause a muscle in the body area of the patient to contract;

and

an applicator comprising:

a casing;

the magnetic field generating device housed in the casing of the applicator;

and

a radiofrequency electrode disposed between the magnetic field generating device and the body area of the patient, the radiofrequency electrode comprising a conductive surface comprising a plurality of protrusions separated from one another, wherein the radiofrequency electrode is configured to generate radiofrequency waves to heat tissue at the body area.

17. The device of claim 16, wherein the magnetic field generating device further comprises a flat coil with an air core.

18. The device of claims 16 or 17, wherein the radiofrequency electrode comprises a metal layer on an insulating substate.

19. The device of any one of claims 16 to 18, wherein the plurality of protrusions is located below the magnetic field generating device, and wherein a number of protrusions in the plurality of protrusions is in a range of 10 to 600.

20. The device of any one of claims 16 to 19, wherein a magnetic flux density measured on the plurality of protrusions during the magnetic treatment is in a range of 0.1 T to 5 T.

21. The device of any one of claims 16 to 20, wherein the plurality of protrusions comprises a first protrusion and a second protrusion, and wherein the first protrusion and the second protrusion are parallel to one another.

22. The device of any one of claims 16 to 21, wherein a shortest distance between the magnetic field generating device and the radiofrequency electrode is in a range of 0.1 mm to 100 mm.

23. The device of any one of claims 16 to 22, wherein the radiofrequency electrode is a bipolar radiofrequency electrode.

24. A treatment device for providing a magnetic treatment and a radiofrequency treatment to a body area of a patient, comprising:

an energy storage device configured to store electrical energy;

a magnetic field generating device;

a switching device configured to discharge the electrical energy from the energy storage device to the magnetic field generating device, such that a time-varying magnetic field is generated and provides muscle contraction to a muscle in the body area of the patient,

wherein the time-varying magnetic field has a magnetic flux density in a range of 0.1 Tesla to 7 Tesla and a repetition rate in a range of 0.1 Hz to 700 Hz; and

a radiofrequency electrode configured to generate radiofrequency waves to heat tissue in the body area of the patient,

wherein a body of the radiofrequency electrode comprises a plurality of openings in a range of 5 to 1000 openings.

25. The device of claim 24, wherein the magnetic field generating device comprises an air core.

26. The device of claims 24 or 25, further comprising an applicator comprising a casing, wherein the magnetic field generating device is positioned within the casing.

27. The device of any one of claims 24 to 26, wherein a shortest distance between the magnetic field generating device and the radiofrequency electrode is in a range of 0.1 mm to 100 mm.

28. The device of any one of claims 24 to 27, wherein the magnetic field generating device and the radiofrequency electrode are separated by an insulating material and/or an air gap.

29. The device of any one of claims 24 to 28, wherein the radiofrequency electrode comprises a conductive layer deposited on an insulating substrate, and wherein a thickness of the conductive layer is in a range of 0.01 mm to 5 mm.

30. The device of any one of claims 24 to 29, wherein the radiofrequency electrode further comprises an electrically insulating material and/or a dielectric material disposed within each opening of the plurality of openings.

31. The device of any one of claims 24 to 30, wherein the body of the radiofrequency electrode further comprises a plurality of protrusions, wherein adjacent protrusions of the plurality of protrusions define the plurality of openings, and wherein at least one of the plurality of openings is further defined by a hypothetical circle fitting within the opening between adjacent protrusions,

such that a maximum diameter of the hypothetical circle fitting within the opening between the adjacent protrusions is in a range of 0.01 mm to 10 mm.