CLAIMS

1. A device for stimulating a tissue with electromagnetic fields, the device comprising:

- a computing unit;
- an external power source connected to the computing unit;
- a decoupling circuit connected to the external power source and to the computing unit; and
- an arrangement of electromagnetic transducers connected to the computing unit and to the decoupling circuit, the arrangement is functionally disposed over the tissue;

wherein the computing unit implements a method for stimulating the tissue with electromagnetic fields, the method comprising the stages of:

a) applying an electric field stimulus to a tissue through an arrangement of electromagnetic transducers that receives an activation signal, the frequency of which varies from an initial tissue stimulation frequency (f_{ie}) to a final tissue stimulation frequency (f_{fe}) with increments or decrements in steps of a frequency delta (Δf_e) during a time delta (Δt_e);

b) measuring the tissue impedance response to the stimulus of stage (a);

c) establishing a reference level with the tissue impedance response measured in stage (b);

d) establishing a tolerance (NT) to the reference level established in stage (c);

e) determining lower tissue stimulation frequencies (f_{bx}) as the point where the tissue impedance response falls below the tolerance (NT) established in stage (d); and

f) determining upper tissue stimulation frequencies (f_{tx}) as the point where the tissue impedance response returns to the tolerance (NT) established in stage (d);

wherein the upper tissue stimulation frequencies (f_{tx}) are greater than the lower tissue stimulation frequencies (f_{bx}) and “x” is a natural number greater than or equal to 1.

2. The device of Claim 1, wherein the tolerance (NT) is between 25% and 50%.

3. The device of Claim 1, wherein the initial tissue stimulation frequency (f_{ie}) and the final tissue stimulation frequency (f_{fe}) are between 0.1 Hz and 1000 kHz.

4. The device of Claim 1, wherein the frequency delta (Δf_e) is a value between 0.1 Hz and 1 kHz.

5. The device of Claim 1, wherein the time delta (Δt_e) is between 1 second and 1 hour.

6. The device of Claim 1, wherein after stage (f), the following stages are completed:

g) determining stimulation frequency bands based on the lower tissue stimulating frequencies (f_{bx}) determined in stage (e) along with the upper tissue stimulating frequencies (f_{tx}) determined in stage (f); and

h) applying a electric field stimulus to a tissue through an arrangement of electromagnetic transducers that receive an activation signal the frequency of which varies by the stimulation frequency bands determined in stage (g) with increments or decrements in steps of a frequency delta (Δf_e) during a time delta (Δt_e);

i) establishing a maximum stimulation time (t_{max});

j) measuring the tissue impedance response to the stimulus of stage (h); and

k) verifying that the tissue impedance response measured in stage (j) in the stimulation frequency bands determined in stage (g) return to the tolerance (NT) established in stage (d) or exceed the maximum stimulation time (tmax).

7. The device of Claim 6, wherein stage (k) comprises the following verifications:

- if the maximum stimulation time (t_{max}) is exceeded, then finalizing;
- if the maximum stimulation time (t_{max}) is not exceeded, and the tissue impedance response measured in stage (j) is below the tolerance (NT) established in stage (d), repeating stage (h); and
- if the tissue impedance response measured in stage (j) in the stimulation frequency bands determined in stage (g) exceed the tolerance (NT) established in stage (d), then finalizing.

8. A device for stimulating a tissue with electromagnetic fields, the device comprising:

- a computing unit;
- an external power source connected to the computing unit;
- a decoupling circuit connected to the external power source and to the computing unit; and
- an arrangement of electromagnetic transducers connected to the computing unit and to the decoupling circuit, the arrangement is functionally disposed over the tissue;

wherein the computing unit implements a method for stimulating the tissue with magnetic fields, the method comprising the stages of:

a') applying a magnetic field stimulus to a tissue through an arrangement of electromagnetic transducers that receive an activation signal, the frequency of which varies from an initial tissue stimulation frequency (f_{im}) to a final

tissue stimulation frequency (f_{fm}) with increments or decrements in steps of a frequency delta (Δf_m) during a time delta (Δt_m);

b') measuring the tissue impedance response to the magnetic field stimulus through the electrical field transducers of the arrangement of electromagnetic transducers;

c') establishing a reference level with the tissue impedance response measured in stage (b');

d') establishing a tolerance (NT) to the reference level established in stage (c');

e') determining lower tissue stimulation frequencies (f_{bx}) as the point where the tissue impedance response falls below the tolerance (NT) established in stage (d'); and

f') determining upper tissue stimulation frequencies (f_{tx}) as the point where the tissue impedance response returns to the tolerance (NT) established in stage (d');

wherein the upper tissue stimulation frequencies (f_{tx}) are greater than the lower tissue stimulation frequencies (f_{bx}) and "x" is a natural number greater than or equal to 1.

9. The device of Claim 8, wherein after stage (f'), the following stages are completed:

g') determining stimulation frequency bands based on the lower tissue stimulating frequencies (f_{bx}) determined in stage (e') along with the upper tissue stimulation frequencies (f_{tx}) determined in stage (f');

h') applying a magnetic field stimulus to a tissue through an arrangement of electromagnetic transducers that receive an activation signal, the frequency of which varies by the stimulation frequency bands determined in stage (g') with increments or decrements in steps of a frequency delta (Δf_m) during a time delta (Δt_m);

i') establishing a maximum stimulation time (t_{max});

j') measuring the tissue impedance response to the stimulus of stage (h') by means of electrical field transducers of the arrangement of electromagnetic transducers; and

k') verifying that the tissue impedance response measured in stage (j') in the stimulation frequency bands determined in stage (g') return to the tolerance (NT) established in stage (d') or exceed the maximum stimulation time (tmax).

10. The device of Claim 1, wherein the computing unit is a special purpose computing unit comprising a central processor unit (CPU) connected to oscillators from a first OSC 1, a

second oscillator OSC 2 to an oscillator OSC n each oscillator having an activation signal output; wherein n is a natural number equal or greater than zero.

11. The device of Claim 10, wherein the computing unit is also connected to a peripheral device selected among others, from storage devices such as a memory unit, a database and a hard drive, input devices such as a keyboard, a camera, a touchscreen display, and a scanner, output devices such as a display and a printer.