CLAIMS

1. An apparatus for providing pulsed electromagnetic field (PEMF) treatment, comprising:

a substrate;

one or more first electrically-conductive loops on the substrate connected to one or more corresponding signal generators configured to generate one or more PEMF signals at the one or more first electrically-conductive loops;

one or more second electrically-conductive loops each connected to a respective tunable non-active circuit, the one or more second electrically-conductive loops being arranged at a predetermined distance from the one or more first electrically-conductive loops on the substrate to form an array,

wherein each tunable non-active circuit comprises at least one variable capacitor for tuning each of the one or more second electrically-conductive loops to the one or more PEMF signals.

2. The apparatus of claim 1, wherein each of the first and second electrically-conductive loops has a diameter of between approximately 4 inches and 8 inches.

3. The apparatus of claim 1, wherein the one or more first electrically-conductive loops comprise two first electrically-conductive loops connected to two corresponding signal generators and the one or more second electrically-conductive loops comprise a plurality of second electrically-conductive loops connected to respective tunable non-active circuits.

4. The apparatus of claim 3, wherein the two corresponding signal generators simultaneously transmit respective radio frequency signals via the two first electrically-conductive loops.

5. The apparatus of claim 3, wherein the two corresponding signal generators transmit respective radio frequency signals consecutively via the two first electrically-conductive loops.

6. The apparatus of claim 1, wherein the one or more first electrically-conductive loops comprise four first electrically-conductive loops connected to four corresponding signal generators and the one or more second electrically-conductive loops comprise four or more second electrically-conductive loops connected to respective tunable non-active circuits.

7. The apparatus of claim 6, wherein the four corresponding signal generators simultaneously transmit respective radio frequency signals via the four first electrically-conductive loops.

8. The apparatus of claim 6, wherein the four corresponding signal generators transmit respective radio frequency signals consecutively via the four first electrically-conductive loops.

9. The apparatus of claim 1, wherein the substrate comprises a flexible material.

10. An apparatus for treating a subject by applying one or more pulsed electromagnetic field (PEMF) signals, comprising:

one or more generator circuits each configured to generate a radio frequency (RF) signal;

an array of plural loop antennas, at least one of the plural loop antennas being coupled to one of the one or more generator circuits and at least another one of the plural loop antennas being coupled to a respective tunable non-active circuit, each loop antenna comprising a conductor coil; and

a substrate configured to mount at least the array of plural loop antennas, said substrate and the array of plural loop antennas forming a treatment surface configured to be disposed proximate the subject,

wherein each tunable non-active circuit comprises at least one variable capacitor for tuning the respective tunable non-active circuit to the RF signal generated by one or more generator circuits.

11. The apparatus of claim 10, wherein each loop antenna coil has a diameter of between approximately 4 inches and 8 inches.

12. The apparatus of claim 10, wherein the one or more generator circuits comprise two generator circuits coupled to respective two loop antennas, and the at least another one of the plural loop antennas comprises a plurality of loop antennas coupled to respective tunable non-active circuits.

13. The apparatus of claim 12, wherein the two generator circuits simultaneously transmit respective radio frequency signals via the respective two loop antennas.

14. The apparatus of claim 12, wherein the two generator circuits transmit respective radio frequency signals consecutively via the respective two loop antennas.

15. The apparatus of claim 10, wherein the one or more generator circuits comprise four generator circuits coupled to respective four loop antennas, and the at least another one of the plural loop antennas comprises four or more loop antennas coupled to respective tunable non-active circuits.

16. The apparatus of claim 15, wherein the four generator circuits simultaneously transmit respective radio frequency signals via the respective four loop antennas.

17. The apparatus of claim 15, wherein the four generator circuits transmit respective radio frequency signals consecutively via the respective four loop antennas.

18. The apparatus of claim 10, wherein the substrate comprises a flexible material.

~~19. A method for applying one or more pulsed electromagnetic field (PEMF) signals to a subject, comprising:~~

~~providing an array of a plurality of loop antennas, at least one of which is coupled to a corresponding one or more generator circuits on a substrate configured to mount at least the array of plural loop antennas, said substrate comprising a treatment surface configured to be placed proximate the subject; and~~

~~activating one or more of the generator circuits to generate one or more treatment signals to corresponding one or more of the loop antennas,~~

~~wherein the array of a plurality of loop antennas comprises at least one loop antenna connected to a tunable non-active circuit having at least one variable capacitor for tuning the respective tunable non-active circuit to the one or more treatment signals generated by the one or more generator circuits.~~

19~~20~~. A method of manufacturing an apparatus for treating a subject by applying one or more pulsed electromagnetic field (PEW') signals, comprising:

coupling one or more first loop antennas to a corresponding one or more generator circuits;

placing one or more second loop antennas, each connected to a tunable non-active circuit comprising at least one variable capacitor, at a predetermined distance from the one or more first loop antennas to form an array;

tuning each tunable non-active circuit by adjusting the respective at least one variable capacitor according to a detected output from the one or more generator circuits; and

providing a substrate for mounting the array.