Claims

1. A device arranged to provide an air current, comprising:

an ion generating device configured to generate an electrostatic field to ionize air molecules;

at least one power source;

a plurality of electrodes electrically coupled to the at least one power source configured to cause the electrodes to generate respective oscillating electric fields to progressively increase a speed of the ionized air molecules to generate the air current, wherein the electrodes include being sequentially arranged as respective stages, which are classified into odd and even stages; and

a driving electronics device electrically coupled to the at least one power source and electrodes, wherein the driving electronics device is configured to transmit first and second signals to the electrodes to cause the electrodes to generate the respective oscillating electric fields.

2. The device of claim 1, wherein each stage includes a pair of electrodes in opposing arrangement, and sequentially arranged includes being serially arranged.

3. The device of claim 2 , wherein a number of the stages include ten stages.

4. The device of any preceding claims, wherein the ion generating device includes a corona discharge ionization device or a RF plasma generator.

5. The device of claim 1, wherein the driving electronics device includes an accelerating voltage power supply arranged to output an accelerating voltage and, wherein the first and second signals respectively include the accelerating voltage and a ground potential.

6. The device of claim 5, wherein the accelerating voltage is configured to be between 300 V to 500 V.

7. The device of claim 6 , wherein the driving electronics device is configured to switchably transmit the first and second signals to between the odd and even stages respectively at a predetermined frequency.

8. The device of claim 7, wherein the predetermined frequency includes a frequency of 167 Hz.

9. The device of claim 2, wherein the stages in the serial arrangement are arranged into concentric rings.

10. The device of claim 2, wherein each stage is spaced from another adjacent stage by a predetermined distance.

11. The device of claim 10, wherein the predetermined distance ranges between 5.00 mm to 6.12 mm.

12. The device of claim 1, wherein the ion generating device includes at least one discharge electrode configured to generate the electrostatic field.

13. The device of claim 12, wherein the discharge electrode is biased at a voltage of -4500 V.

14. A method of providing an air current using a device which includes an ion generating device, at least one power source and a plurality of electrodes electrically coupled to the at least one power source, and a driving electronic device electrically coupled to the at least one power source and electrodes, wherein the electrodes include being sequentially arranged as respective stages, which are classified into odd and even stages, the method comprises:

generating an electrostatic field using the ion generating device to ionize air molecules; and

configuring the at least one power source to cause the electrodes to generate respective oscillating electric fields to progressively increase a speed of the ionized air molecules to generate the air current, wherein the driving electronics device is configured to transmit first and second signals to the electrodes to cause the electrodes to generate the respective oscillating electric fields.