Title (en)

NON-OZONE A CLUSTER ANION APPARATUS

Title (de)

OZONFREIER APPARATFÜR CLUSTER-ANIONEN

Title (fr)

GENERATEUR D'ANIONS PAR GRAPPES SANS GENERATION D'OZONE

Publication

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Application

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Abstract (en)

[origin: WO2004054628A1] The present invention claims non-ozone a cluster anion apparatus, which attached to inside indoor air purifiers or air conditioners, generates anion. Electrons generally regard the interface between a metal and the gas as a barrier, and to discharge an electron beyond the barrier, energy higher than the energy confining the electron should be applied. In other words, an electric field higher than the electron-confining energy is required. In case the electric field gets higher, tunnel effect occurs, in which electrons have the property of wave and penetrate the thinned energy barrier between a metal and a dielectric(air), instead of passing over it. Tunnel effect has been generally known to happen in case the thickness of energy barrier is below about 100[Å]. On the interface between a metal and the gas, tunnel effect happens in case the charged electric field is around 10<7>~10<8>[V/cm¯] to generate a current of a few μA. The tunnel effect, however, may happen at a voltage as low as 2-5kV in case of a fine line section or sharp points. To be specific, the present invention consists of anion generating section that has the form of metal fiber(MF) with innumerable sharp protrusions and power supply section, and the anion generating section is composed of an alloy of eight metals of platinum, stainless steel, copper, silver, zinc, nickel, manganese and tungsten, conductive cloth with free electrons, conductive gum and semi-conductive gum twisted like a rope. The MF employed for the present invention has numerous needles on its surface. As the needles discharge electrons to the air at the energy lower than general ionization potential when the MF is charged with electric energy. In this case the ambient moisture due to attachment of moisture influences it. Electrons emitted from needles attach to neutral particles, such as oxygen and others (oxygen has very high electron affinity [-135KJ/mole], to turn them into anions. In the case, mass of anions grows larger than that of electrons and their moving speed drop not only to reduce conductance but also not to ionize other neutral particles. Accordingly, the present invention claims that it generates anion, without generating ozone (O3).

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