
Properties of Dawoo Korea Plasma Sterilizer Using Nonthermal Atmospheric Pressure Plasma

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The research for plasma-biology application such as sterilization and disinfection, skin care, haemostasis, wound repair and cancer death etc is carried out aggressively. The industry for plasma-biology science and technology will be anticipated to be the growth source of next generation.

We have developed the compact plasma surface sterilizer called as Dawoo Korea Plasma Sterilizer(DWK-DP100) with low cost, excellent high efficiency and three outstanding functions. The first function is air purification by resolving organic matter with UV light and filters. The second one is to protect the secondary infections caused by the bacteria and virus in air environments. The third one is complete sterilization of virus and bacteria existing in volumetric air and material's surface in the closed space. It was officially certificated by Korea Conformity Laboratories(KCL) to sterilize over 99.99% for bacteria in air and surface of bigger closed room than 8 m³ space. Active species emitted by plasma sterilizer are OH, H₂O₂, O, O₃ etc.

The effect of water vapor for active species gas emitted from the outlet of plasma sterilizer was investigated. Diffusion properties of the ozone gas with water vapor were measured and decreasing mechanism of ozone gas will be discussed.

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[2] H. Eto, Y. Ono, A. Ogino and M. Nagatsu, "Low Temperature Sterilization of Wrapped Materials using Flexible Sheet-type Dielectric Barrier Discharge.", *Appl. Phys. Lett.* 93, 221502 (2008)