

Recently, studies on air purifiers due to soaring fine dust have been actively conducted. In the method using electricity among indoor air cleaners, ozone is generated in the process of collecting particles in the indoor air. Ozone can cause unpleasant odor in indoor space, which is a closed space. If exposed for a long time, it will stimulate eyes and respiratory mucous membranes and cause symptoms such as nausea and cough.

KAPA indoor air purifier regulations stipulate that particulate collection efficiency is 80% or more and ozone generation is 30ppb or less. Therefore, it is necessary to study the electric dust collector with high dust collection efficiency and low ozone generation.

In this study, the carbon fiber Electrostatic dust collecting device was studied, and the dust collecting efficiency and ozone concentration were measured according to the voltage characteristics. The number of discharge electrodes was designed and fabricated as 8ea and 16ea. The dust collecting efficiency and ozone concentration according to the voltage characteristics were measured using Electrostatic dust collecting device. The measured results showed a high dust collection efficiency even at lower voltage than when the +voltage was negative -voltage. The ozone concentration in the case of +voltage showed little ozone and in the case of -Voltage, the ozone concentration was high. In the case of 16 discharge electrodes, the efficiency was 80.1% and the ozone concentration was 3ppb for 9kV voltage. 90.82% for 10kV voltage and 4.8ppb for ozone concentration. This satisfied all the rules of the association.