

Indoor air purifier using triboelectrification

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Recently, South Korea has suffered from particulate matters (PMs) especially during spring and winter seasons. Although main source of PMs is still controversial, it is urgent to protect people from these harmful PMs. There are several methods for removal of PMs from the air such as filtration (HEPA filter), electrostatic precipitation and so on. In this study, we developed another method that utilizes triboelectrification between aluminum plate and polytetrafluoroethylene (PTFE) spheres. Under mechanical movement, PTFE sphere receives electrons from aluminum plate due to high electronegativity of PTFE. And then, the particles with charged states are captured either by PTFE spheres or aluminum plates. This work was supported by the National Research Foundation of Korea (NRF) funded by the Ministry of Science, ICT and Future Planning (NRF-2016R1C1B2008694).

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