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Sharp Business Systems teams up with IIT Delhi

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This project was started in 2018



Japanese firm Sharp Corporation, working in collaboration with Associate Professor Dr. Sagnik Dey and Associate Professor Dr. Gazala Habib of Indian Institutes of Technology, Delhi has demonstrated that Plasmacluster Ion (PCI) has an efficacy to remove PAHs (Polycyclic Aromatic Hydrocarbons), which are contained as toxic air pollutants in Indian cities.

This project was started in 2018 by measuring the composition of particulate matter in air pollutants in New Delhi NCR region of India. As a result, many types of pollutants were identified, including PAHs, which are known to be toxic to the human body.

Using the results as a reference, IIT Delhi and Sharp selected three types of PAHs to test the effectiveness of Plasmacluster against these PAHs. The results showed that 91.1% of Fluoranthene, 62.1% of Chrysene, and 94.6% of Dibenzo(a, h)anthracene were effectively removed by applying Plasmacluster.

Plasmacluster Ion is a revolutionary air purification technology from which positive ions [H+(H2O) n]] and negative ions [O2–(H2O) m] are released into the air simultaneously. These positive and negative ions instantly recombine on the surface of pollutants such as bacteria, viruses and chemical compounds floating in the air to form hydroxyl (OH) radicals, which have extremely high oxidation ability, and this chemical reaction decomposes the cellular compounds or chemical structures, thereby neutralizing their toxicity. Sharp is using the fact that higher ion concentration results in greater efficacy to decompose air pollutants. SHARP envisaged the potential application of this technology in other environments such as hospital, office, public area etc.

Dr. Gazala Habib commented, “From this test results, it is confirmed that PCI technology is effective in decomposing and reducing the carcinogenic PAHs, which are present in inhalable fraction of particulate matter. It is expected that usage of PCI technology will lead to the improvement of the indoor air environment and contribution to the healthier life of user around the world.”

Dr. Sagnik Dey said, “Air pollution is one of the leading health risk factor in India. While it will take time to reduce exposure to air pollution through policy, air purifier has emerged as one of the tools to protect personal exposure. The PCI technology of SHARP is experimentally prove to be successful in eliminating particle bound PAHs from toxic air.

Sharp will continue its initiatives to contribute to society in health domain through further evolution of PCI technology and additional demonstrations of its efficacy with the aim of lessening the burden of various contaminants in our life.