

Rammohan College

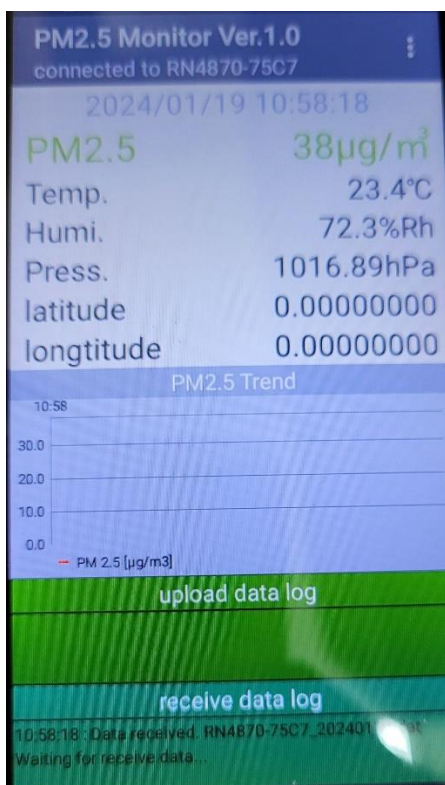
Department of Botany

About Particulate Matter 2.5 Detector

Airborne particulate matter is a matter of global interest since it is a harmful pollutant and represents a mixture of many chemical species. Particulate matter represents a complex mixture constituting of mixaerosols. Particles, therefore, can vary widely in terms of shape and size as well as in terms of chemical composition. Particles are defined by their diameter for air quality regulatory purposes. The particles with diameter of 10 micron or less (PM10) can be inhaled into lungs leading to serious health effects. On the other hand, fine particulate matter are particles with less than 2.5 micron in diameter (PM 2.5). Emissions from burning of coal, oil, diesel or wood can lead to PM2.5 pollution in outdoor air quality as well as generation of PM10. The City of Kolkata has been experiencing changing air quality and the PM2.5 pose serious set of health challenges to residents, in particular to young and elderly individuals.

Keeping the air quality monitoring into perspective and for sensitization of young minds, a PM2.5 sensor has been installed in the Department of Botany in the premises of the New Science Building of Rammohan College in collaboration with Prof. Punyasloke Bhadury, Centre for Climate and Environmental Studies& Department of Biological Sciences, IISER Kolkata.

The cost-effective sensor development has been validated and through this installation vital data on air quality, in particular for PM2.5, humidity, among others are being generated 24x7. The information can help towards effective decision-making process to improve the city air quality and most importantly will inculcate thinking among the young minds studying in Rammohan College.



Future plan

PM 2.5 particles are a complex mixture of solid and aerosols of very small size that can easily pass through the nose and throat and penetrate into the lungs causing serious severe health issues.

PM2.5 monitoring is an efficient way to detect high concentrations of particulate matter and also prevent high level exposures. Therefore, real-time monitoring of particulate matter PM2.5 levels in our college premises will help in calculating air quality index which in future may help the policy makers to deliver health advisories and formulating action plan to meet the standards.

Our future aim will be to develop robust models to track pollutants and long term studies on tracking effects on human health and ecosystem.