

AERODROPS: SELECTIVE DETECTION OF INDIVIDUAL AIRBORNE DROPLETS

Fields of use

Sensors, Air quality monitoring, Pandemic control, Hospitals, Schools and Kindergartens, Sport and Fitness facilities, Animal farms, Metal industry using cooling lubricants

Current state of technology

TRL6 (technology demonstrated in relevant environment)

Next steps

Prototype demonstration in operational environment

Type of cooperation

Technical cooperation agreement, Testing in operational environment, Joint venture agreement, Licensing IP rights

Partners sought

Producers of sensors and devices for air quality monitoring, Producers of HVAC, Partners for testing in End-users environments

Intellectual property

Patent application No. EP24213758.6 filed in November 2024

Developed by

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Motivation

The spread of airborne diseases transmitted via respiratory droplets, such as COVID-19, poses a significant public health risk, especially in schools, kindergartens, elderly care homes, and hospitals. However, controlling airborne disease transmission remains challenging due to the lack of instruments capable of selectively detecting respiratory droplets. As a result, real-time data on respiratory droplet concentration is unavailable, making it difficult to implement targeted preventive measures. To maintain a safe environment, institutions mostly rely on continuous ventilation, which is both costly and inefficient. Similar problems with airborne disease transmission exist in livestock farms. Meanwhile, airborne droplets of cooling lubricants pose a health risk for workers in the manufacturing industry.

Our technology

AeroDrops revolutionizes indoor air safety as the first device to selectively detect and count respiratory droplets in real time—enabling data-driven ventilation control that reduces infection risks, improves air quality, enhances quality of life, and cuts energy costs in hospitals, schools, and care homes. AeroDrops can be integrated into ventilation system, or can be used as a standalone device to monitor indoor air quality.



Main advantages

- AeroDrops selectively measures respiratory droplets, without influence from other air pollutants, such as particulate matter
- Portable device, affordable, and easy-to-use
- Possible to integrate into HVAC systems

Potential applications

- Counting of human or animal respiratory droplets, bioaerosols, and droplets comprising bacteria or viruses in indoor air
- Controlling indoor air quality during seasonal respiratory epidemics and pandemics
- Monitoring of water-containing pollen grains in air
- Detection of aerosolized droplets of water-based cooling lubricants in metal industry.