

# NEERI-KSHAN to monitor micro-level pollution

■ First ever drone in country to use the technology

MEGHA TIWARI  
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Council of Scientific & Industrial Research (CSIR) - National Environmental Engineering and Research Institute (NEERI) has developed the first ever drone in country that would monitor pollution at micro level.

The scientists named it, NEERI-KSHAN-AQ and claimed that it is one-of-its-kind drone built ever built in India. Through this method, the cost of the sampling at the non accessible zones can be lowered up to 50 per cent.

Among the team comprised of nearly six, scientist Piyush Kakote, who developed the drone spoke to LT and said that earlier airplanes were used or data was collected through point source method, which was time consuming, expensive and unable to access many sites like industrial, resulting in barrier in air quality monitoring.

"This method is easy and the coupling between state of the art multi-rotor Unmanned aerial vehicle (UAV) technology and environmental sensors will provide prominent option for collection of Z-axis (vertical) parameters, which became very significant in urban



environment congested with sky scrappers."

As it is a drone, we will get accurate level of pollution at different altitude. "Suppose, for skyscraper, the drone can reveal the exposure of inhabitants to pollution at different altitudes, at each floor", said Kakote.

It may be noted that different sensor can be attached to the drone depending on requirement and payload capacity.

The device can fly in various sites to study air quality parameters, such as, PM,SO<sub>2</sub>,NO<sub>x</sub> and CO at different heights.

"It is a unique way through which the data prediction is easily predictable data. In coming days, we will continue to make required advancement in the technology."

Along with Kakode, the team included Dr Nitin Labhsetwar, Chief Scientist and Dr Rakesh Kumar,

- Can be attached with any portable light weight sensor modules
- Can go up to 120m
- Bird's eye view of pollutant levels in industrial clusters, traffic intersections, urban hotspots
- Plan to handover the drone to government agencies, mostly pollution control board

Director CSIR-NEERI, Dr Anirban Middey, Ankit Gupta and Sagar Nimasadkar.

## Need of time!

As per WHO data of air pollution, Nagpur was found to be the most polluted city in the entire state, with 84th rank. It was closely followed by Chandrapur at 64. Doctors claimed that the number of patients with asthma has doubled over the last five years in the city.

Not only this, but pollution in Delhi reach threatening level during winters. In the past two days, authorities have rate the conditions as "severe to emergency", which indicates the potential for a public health crisis. At such situation, scientists are aiming to utilise the drone in full potential for urban pollution monitoring.