

Air Quality Monitoring at Heavy Traffic Zone in Hyderabad

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Abstract: Recently the intensity and magnitude of air pollutant concentration has grown up rapidly in the troposphere. The air pollution is primarily associated with automobiles and industrial sources Hyderabad, capital of Telangana, is a center of southern part of India for both industrial and commercial activity. It is one of the most populous urban areas with approximately 6.8 million inhabitants and over 73,000 small, medium and major industrial establishments sharing the greater city. Air pollution in India is monitored by the Central Pollution Control Board (CPCB) together with the State Pollution Control Boards (SPCBs) and the National Environmental Engineering Research Institute (NEERI) in Nagpur. The National Air Quality Monitoring Programme (NAMP) was started in 1984 with 7 sensor stations, 248 towns and cities have the air quality network of 591 Air Quality Monitoring Stations upto 2015, it is reported that in India 2022 added 180 manual air quality monitoring stations, increasing their number to 883 to achieve the target of 1,500 by 2024. For our study due to practical difficulties to collect, analysis the air quality, pollutants data has been collected from CPCB. The dataset contains City, Date, PM_{2.5}, PM₁₀, NO, NO₂, NO_x, NH₃, CO, SO₂, O₃, Benzene, Toulene, Xylene, Air Quality Index (AQI). Hyderabad was divided into 6 zones, air quality monitoring sensors is located at 14 places in and around six zones. For our study we selected 2 stations Newmalakpet and Sanathnagar based on heavy traffic area to analyse the maximum concentration of pollutants such as PM_{2.5}, PM₁₀, NO₂, NO₃, SO₂, CO, for the period of three months (Dec 2022, Jan, Feb 2023). It was observed at site 1 to site 52 PM_{2.5}, range 120 to 249 µg/m³ is very poor as per AQI, PM₁₀ range 101.2 to 171 µg/m³ is moderately polluted as per AQI, NO₂ range 7.46 to 32.9 µg/m³ is good as per AQI, NH₃ range 3.06 to 5.44 is good as per AQI, SO₂ is 12.97 to 8.53 µg/m³ is good, CO 61.83 to 71.9 is severe as per AQI, continuous air quality monitoring is necessary to protect environment and human health.

Keywords: Air Pollutant

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