Pollution Measurements in Bucharest Using Mobile Laboratory Nearby Educational Buildings

Razvan Stefan Popescu*
Technical University of Construction of Bucharest (TUCB), Romania

Lelia Letitia Popescu
Technical University of Construction of Bucharest (TUCB), Romania

Abstract:

This study uses a mobile laboratory intended to evaluate pollutants mainly related to transportation to monitor the outdoor air quality in Bucharest, Romania. Particulate matter (PM2.5 and PM10), carbon monoxide (CO), ozone (O3), sulfur dioxide (SO2), nitrogen oxides (NOx), and BTEX compounds (benzene, toluene, ethylbenzene, and xylenes) are among the major pollutants that are measured. To assess their impact on pollutant levels, meteorological factors like temperature, humidity, wind speed, and solar radiation were also monitored in addition to the pollutants. The study highlights how vehicle emissions contribute to the deterioration of urban air quality, especially in places with heavy traffic. The impact of weather factors, such as sunny or rainy days, on the dispersion and transformation of pollutants is also examined in this study. Rainy days aid in lowering pollutant levels through improved dispersion and chemical oxidation, while sunny days frequently result in higher concentrations of pollutants because of stagnant air and increased photochemical activity. This study emphasizes how crucial it is to continuously monitor the quality of the air in cities like Bucharest and how specific pollution control measures are required to reduce the health risks related to poor air quality.

Keywords:

BTEX, mobile laboratory, outdoor pollution, VOC.