



ANALYSIS OF AIR QUALITY ASSESSMENT IN KIELCE IN RELATION TO THE COVID-19 PANDEMIC

ANALIZA OCENY JAKOŚCI POWIETRZA W KIELCACH W ZWIĄZKU Z PANDEMIĄ COVID-19

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Abstract

Air pollution has a significant impact on citizens' well-being and overall life quality. In this regard, regular air quality monitoring aims to keep pollution levels within prescribed limits and to identify the factors (winds, traffic, seasons, ambient temperature, air humidity, and so on) that influence pollution levels. To carry out a preliminary analysis of the air quality in Kielce, a specialist detector of PM_{2.5} and PM₁₀ particles Steinberg 10030389 SBS-PM_{2.5} was used. Besides, the analysis referred to pollutants such as SO₂, NO₂, C₆H₆, which were provided from the Chief Inspectorate of Environmental Protection. Controlling the above mentioned pollutants for monthly and hourly averages of the selected time period in 2020 and 2021, taking into account the epidemiological situation (lockdown), graphs with the results were prepared. Then the analysis was carried out, with the preliminary assumption that the air quality is worse when the population functions normally than when it remains indoors, and that air quality is usually better at night than during the day.

Keywords: air quality, particulate matter, pollution monitoring

Streszczenie

Zanieczyszczenie powietrza ma znaczący wpływ na samopoczucie obywateli i ogólną jakość życia. W związku z tym regularne monitorowanie jakości powietrza ma na celu utrzymanie poziomu zanieczyszczeń w wyznaczonych granicach oraz identyfikację czynników (wiatry, ruch uliczny, pory roku, temperatura otoczenia, wilgotność powietrza itp.), które wpływają na poziom zanieczyszczeń. Do przeprowadzenia wstępnej analizy jakości powietrza w Kielcach wykorzystano specjalistyczny detektor cząstek stałych PM_{2,5} i PM₁₀ Steinberg 10030389 SBS-PM_{2,5}. Ponadto w analizie uwzględniono takie zanieczyszczenia jak SO₂, NO₂, C₆H₆, które zostały udostępnione przez Główny Inspektorat Ochrony Środowiska. Kontrolując ww. zanieczyszczenia dla średnich miesięcznych i godzinowych z wybranego okresu w latach 2020 i 2021, z uwzględnieniem sytuacji epidemiologicznej (blokada), sporządzono wykresy z wynikami. Następnie przeprowadzono analizę, przyjmując wstępne założenie, że jakość powietrza jest gorsza, gdy ludność funkcjonuje normalnie, niż gdy pozostaje w pomieszczeniach zamkniętych, oraz że jakość powietrza jest zwykle lepsza w nocy niż w ciągu dnia.

Słowa kluczowe: jakość powietrza, pył zawieszony, monitoring zanieczyszczeń

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