12

SULFATE AND SULFUR DIOXIDE IN URBAN AIR AND EFFECT OF HUMIDITY AND TEMPERATURE ON THEM

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Sulfate concentration of daily particulates in air was measured in a site in Karaj. The samples were collected by drawing air through glass fiber filter by a high volume air sampler and after extraction the water soluble sulfates from suspended particulates; the sulfate was measured by gravimetric method. In order to measure sulfur dioxide, it was absorbed in diluted hydrogen peroxide solution by drawing air through a sequential sampler. The formed sulfuric acid was titrated against standard alkali. More than 70, 24-hours samples were studied in different humidity and temperature at an interval of 6 days during one year. Mean annual concentration of sulfate was 13.4 mg/m3 and that of sulfur dioxide was 142.8 mg/m3. The highest concentrations of sulfate and sulfur dioxide during this period were 35 and 351.6 mg/m3 respectively. The slope of SO4= variations in different humidity and temperature indicated that when the humidity increased concentration of sulfate is increased and when temperature increased, its concentration is decreased. The slope of SO2 concentrations in different temperature and humidity showed the similar results. In this work the rate of SO4= /SO2 in different atmosphere conditions were also investigated.