

Characterizations of hazardous air pollutants emitted from motor vehicles

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摘要.

Abstract

Emissions from motor vehicles have been one of the primary pollution sources in the metropolitan areas throughout Taiwan for a long time. The government has devoted a great deal of effort to improving this situation. This study was conducted to make a survey of air inside tunnels to understand the impact from motor vehicles in real roadway conditions in April and May 1993 and the period from January to February 1994. Suspended particulate matter with aerodynamic diameters less than 10 μm were collected on Teflon filters, which were installed in a dichotomous sampler, and were analyzed for chemical elemental components by using XRF, gaseous and particulate polycyclic aromatic hydrocarbons (PAHs) were measured using a PS1/ PUF sampler equipped with a glass fiber filter and a polyurethane foam plug (PUF) installed behind the filter. In addition, volatile organic compounds (VOCs) were trapped by the carbotrap adsorbent then identified by thermal desorption/GC (FID) technology. Other relevant environmental information and data regarding traffic volume were also gathered and/or counted. This investigation presents the characterizations of air pollutants measured in tunnel air and provide the information for the source identification on air pollution source in the air.