

1.203 Comparison between TD-GC/MS and HPLC on analyzing polycyclic aromatic hydrocarbons in PM_{2.5} from Ho Chi Minh City.

Early Career Scientist

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Abstract:

Thermal desorption coupled with gas chromatography/mass spectrometry (TD-GC/MS) has been applied to analyze semi-volatile organic compounds (SVOCs) including polycyclic aromatic hydrocarbons (PAHs) recently. This method using high temperature at TD equipment to extract PAHs from the matrix, in this case is glass fiber filter, requires no pretreatment step, which means less consuming time and solvent. This is an eco-friendly analysis method for PAHs compared to traditional solvent extraction (SE) based method. A comparison between TD-GC/MS and HPLC, conventional analyzing method for PAHs, was conducted to check their performance.

Vietnam is a developing country with major concern of air pollution. High density of mobile vehicles, mainly motorbikes, causes severe health problems to human, especially in Ho Chi Minh City, which is the business and financial hub of Vietnam. For controlling air pollution, observing its variation is very important. Air monitoring station was set in Ho Chi Minh City (HCMC) for that purpose, however, specific compounds like PAHs were not under investigation. PM_{2.5} samples collected during 2013-2014 from monitoring station set in Vietnamese National University in HCMC was provided and analyzed. The seasonal variation and distribution profile of PAHs in PM_{2.5} within one year in Ho Chi Minh City were displayed as well as their toxicity.