ABSTRACT

Poly aromatic hydrocarbons (PAHs) is a class of persistent organic pollutants primarily composed of fused aromatic rings and show extensive diversity in their structural composition. Organic pollutants have always remained a matter of concern due to their long-term residency in the environment, transportation over a broader range, bioaccumulation, and toxic tendency. Industrialization and urbanization at a massive scale have increased activities that directly dump pollutants, including PAHs, into the environment. Therefore, it is crucial to investigate the suspectable sources of emission as well as to monitor their negative impacts on the environment. Although environmental profiling of PAHs always remains a challenging task as these compounds undergo photocatalysis and degrade into simpler units under certain ecological conditions. Global monitoring plants under the Stockholm convection provide a harmonized frame work for guild lines and techniques for measuring the concentration of these environmental chemicals over time and their international transportation. Due to their inherited semi-volatile properties, these compounds are dynamically distributed in the gaseous and solid phases at ambient conditions. So far number of systematic studies have been conducted to monitor the regional and global spatial distribution of toxic pollutants in the environment all over the words, but in Pakistan, this trend is few with weak results. The present research work is designed to monitor the air and particle content of PAHs at the regional level. Air sampling is done through specialized designed passive air samplers deployed at three targeted sites in one month. Similarly, soil samples were collected by the grid sampling method. All the samples were extracted for PAHs and analyzed through GC-MS. Diversity of organic (aromatic as well as aliphatic compounds has been detected in the samples. Samples collected from industrial sites contain more toxic pollutants compared to the remaining two sites (agricultural and urban sites.