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# Emission source of PAHs in PM2.5 particle in ambient air of Sakai city, Osaka

Oanh Pham

Osaka Prefecture University, Japan

Polycyclic aromatic hydrocarbons (PAHs) are part of the naturally occurring chemicals in coal, crude oil, and gasoline. They are also produced by burning coal, oil, gas, wood, garbage and tobacco. PAHs produced from these sources can bind or form tiny particles in the air.

Ambient particrate Jambo (PM) is a well-known air pollution and has a very positive effect on air quality and human health. PM with aerodynamic diameter ≤ 2,5 μm (PM2.5) is considered to be very dangerous because it can be enriched in toxic parts and clean particles that can penetrate deep into the lungs. PAHs are derived from fossil pressure and biomass fire. The PM2.5 is less than 2.5 mm wide and can be passed through the airway and inserted into the lung tissue. In addition, PM2.5 carries many harmful computers including polycyclic aromatic hydrocarbons (PAHs), which result in incomplete combinations of organic compounds. For better information on PM2.5-PAHs-PAHs (p-PAHs) in Safai City, Osaka, we evaluated PAHs in the gas and particle class (PM2.5) and shared resources and assessed the risk of lung cancer risk (LLCR). PM2.5 can contain a variety of substances, including polycyclic aromatic hydrocarbons (PAHs), which are organic compounds composed of many fragrant rings [4]. PAHs pose a health risk due to their potential toxicity, including carcinogenicity and mutagenicity. Several nitro-PAHs (NPAHs), such as 1-nitropyrene (1-NP), show higher toxicity than their parental PAHs due to their direct radiation

Methodology and Theoretical Oriuction: Using a small air mass sample (LVAS) with a flow rate of 4 L min-1, particles and gas phase of PAH were collected in glass fiber (GFF) and polyurethane foam (PUF) , respectively. Samples were collected from the roof of a 3-story building at Osaka Prefecture University, Soyii City, Osaka, Japan. HPLC was used to analyze 11 PAHs including phenan Brotherse, anthracene, fluoranthene, pyrene, benz (a) anthracene, chrysene, benzo (b) fluoranthene, benzo (k) fluoran Brotherse, benzo (a) pyrene, dibenz (a, h) anthracene, indeno (1,2,3-cd) pyrene. Diagnostic Ratios (DR) is a PAH resource allocation method. The rear trajectory was used to track the location of the source.

Findings: The main sources of PAHs were gasoline evaporation, vehicle leaks and coal burning. PAHs from fossil waste and biomass combustion There was no significant association between PAHs and air pollution (NOx, SO2, NMHC, etc.) at night. The results showed that gaseous PAHs originated from local sources while PAH-bound PAHs came from a distant region. The retrospective results have shown that East Asia is likely to be one of the outlets for the PAHs at PM2.5 in Sakai City, Japan. TEQ and MEQ meaning at the particle rate was higher than the standard 1 ng / m3 annual estimate of EPA. **Conclusion and significance**: Based on TEQ values, the spirit of Saui City is considered a threat to human health. Because air pollution is a global problem, there is a need for an international policy on PM2.5 and its hazards.

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