

CHAPTER 5

Conclusions

The main purposes of this study were to determine PM₁₀ and PM₁₀-bound PAHs concentrations and to study the characterizations and patterns of PAHs. The 24 hours PM₁₀ concentrations varied from 18.98-174.07 µg/m³. The total PAHs concentration varied from 0.15-23.87 ng/m³. The PM₁₀ and total PAH concentrations at every sampling sites in dry season were significantly higher than those in the wet season. The total PAH concentrations observed in this study are higher than those reported in some city. This high concentrations of PM₁₀ and PM₁₀-bound PAHs in dry season was recognized as a unique seasonal pattern for Mae Moh area and may due to stable meteorological conditions, the basin geomorphology of the basin and several emission sources.

The characterization of PAHs by chemical marker shows the predominant PAHs species found in PM₁₀ samples were BghiPe, IDP, BaP and BbF. The distribution pattern of PAHs in different rings was significantly higher in 6-rings PAHs by following 5- and 4-rings PAHs, respectively. The results emphasized that the importance of vehicle emission as the major contributor to PM₁₀ concentration in the Mae Moh basin. However, careful attention on the wood and coal combustion as well as the biomass burning is also necessary because of their large contributions to PAHs concentrations in some period.

Recommendation for future work

Due to their properties, PAHs are semi-volatile organic compounds, which can occur in both the gas and particle phase in the atmosphere. In order to fully understand the occurrence of these compounds in the atmosphere. The reliable sampling and analytical methods in both of gas and particle phase are necessary.