

## CHAPTER V

### CONCLUSION AND RECOMMENDATION

In Bangkok, the concentration of total PNA such as phenanthrene, fluoranthene and pyrene was in the range of 1.14 to 91.78 ng/m<sup>3</sup>, average PNA concentration in roadside areas was 24.27 ng/m<sup>3</sup> and that in off-road areas was 10.59 ng/m<sup>3</sup> during February-April, 1996.

The daily levels of selected airborne particulate PNA in Bangkok during study periods are presented. T-test independent analysis was significant for three selected PNA for certain intersite comparisons. These results, along with selected PNA concentration, and moderate correlations with TSP concentration, indicate that motor-vehicle emission was the major PNA source and PNA profiles are similar to motor-vehicle emission patterns.

Completely different levels of abundant distribution were found in Pratunam and Bansomdej areas. The Pratunam and Yaowaraj samples showed very high relative concentrations of PNA and TSP. Hence it might be concluded that the PNA pollution in the roadside area is restricted to local pollution caused by the emission from motor-vehicles and it should be noted that PNA concentration in airborne particulates decreased with increasing distance from roadway.

These results are compared with the Air Quality Standard of National Air Toxic Information Clearinghouse (NATICH) as shown in Appendix G. It was found that the concentration of PNA that measured in this research did not exceed the limits in ambient air.

### **Recommendation for Further Study**

The reported PNA atmospheric concentrations in this paper would be lower than the actual value due to losses. Therefore, the data should be subsequently combined with measurement of PNA in gas phase by using Polyurethane Foam (PUF) as trap to correct for the amounts of PNA in air.

Thailand should have Air Quality Guidelines for ambient PNA concentration and should control emission sources of TSP, such as vehicle exhaust or TSP from roadside dust and construction. These are adsorbents for PNA in air. Also, PNA on TSP has a long residence time in the atmosphere and is resuspended when vehicles pass.