Studies on Properties of Road Dust in Chang-hua County

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ABSTRACT

In recent years in Chang-hua, it is approximately 90％of days of Pollutant Standard Index (PSI) value over 100 resulting from the total suspended particulate (TSP). The major reasons were contributed by the engineering construction and road dust resuspension. In order to explore the characteristics of TSP and its particle-bound elements, In this study, the particulate matters were collected on the outlet of ten significant construction sites ,one gravel heap site and general paved roads that over 100 meters away construction or gravel heap in Chang-hua County. The collected samples were digested by using a high-pressure bomb and analyzed by using an inductively coupled plasma/atomic emission spectrometry (ICP/AES) to analyze 16 elements. The results of this study indicated that the particulate matter were larger and averaged 45.6 ％in Chang-hua County. The average amount of Md（＞297μm） were 47.5 and 40.7％, and the average amount of Ms（＜75μm） were 11.9 and 9.1％in the outlet of construction and gravel heap and the general paved roads, respectively between construction and non- construction of the results is no difference. Maybe it results from heavy traffic. The main elemental component of TSP in the construction sites、gravel heap site and general paved roads were very similar with that of road dust which are all come from the ground surface and were mainly consisted of crust elements including Al, Ca, Fe, Mg, K, and Na. The elements of Pb and V were more than another studies yet. Maybe it has affected by the heavy traffic and the samples came from road immediately.

Keywords : 街塵 ; ICP

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