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Why I select this program

Urban air pollution and its effects are becoming an issue of great concern for developing countries. One of the major components of urban pollutants is road dust. Dust on the roads arise from unregulated construction sites and are constantly stirred up by moving vehicles. Pollutants in the road dust generate from soil materials, traffic related exhaust, industrial activities, atmospheric deposition, power plant, coal combustion etc. Distribution of chemical alignment in road dust depends on land use patterns, temporal variation and also particle size of road dust. On the other hand, pollutants existing in road dust may generate ecological and health threats and their assessment is of great environmental significance. Unfortunately, we do not have many studies covering these aspects.

Research Summary

To analyze spatial and seasonal distribution patterns, risk and sources of heavy metals, road dust samples will be collected from different roads in two cities namely Dhaka (Capital of Bangladesh) and Mymensingh (Background site) in summer and winter seasons. The collected dust will be subjected to fractionation for four particle size ($<32\mu\text{m}$, $32-75\mu\text{m}$, $75-150\mu\text{m}$ and $150-250\mu\text{m}$). Then heavy metals will be determined using ICP-MS as well as water soluble ions by IC. Afterwards, Health and ecological risk will be evaluated. Possible sources will be explore using PMF model.

The research result will reveal the seasonal variation of heavy metals in roadside dust associated with their sources. It will help the city authority managing pollution in urban areas.

