D-36 : INVESTIGATION OF EMISSIONS OF SOME INDUSTRIAL ESTABLISHMENTS IN COLOMBO THROUGH A MULTIELEMENTAL ANALYSIS OF DUST

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Dust samples were collected during the month of April after nearly four months of dry weather from road surfaces and curb edges of the neighbourhoods of some industrial establishments and highly trafficked streets of Colombo. The air dried dust samples were sieved into 0.5 g fractions of 70-100 m, 50-70 m and 2 m mixed with "Hoechst-Wachs C", pressed into pellets and analysed by Energy Dispersive X-ray fluorescence Spectrometry (EDXRF) at 12 mA for elements such as K, Ca, Ti, V, Cr, Mn, Fe, Ni, Cu, Zn, Ga, Ge, Hg, As, Se, Br, Pb, Rb, Sr, Y, Zr and Nb.

The detected concentrations reveal information to discriminate natural levels from assumable anthropogenic sources. For example, the concentrations of Pb and Br are in some instances far above the natural background levels of (and around 10 mg/kg respectively. Typical Br/Pb ratios for emissions from Industries using petroleum as fuel as well as traffic induced emissions are observed. Zn is also detected in some cases far above background levels upto 4000 mg/kg. Sources of Zn pollution are steel industries, coal combustion, ceramics, combustion of petroleum products, rubber industries etc. A good correlation with emittants and sources of pollution for most of the elements is observed.