



Characterization of road-deposited sediments in different land-use types in Tehran, Iran

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ABSTRACT

This study investigates the characteristics of road-deposited sediments (RDS) from selective impervious surfaces in the Metropolitan city of Tehran located in Iran. A total number of 19 RDS samples were collected from three different land-use types herewith denoted as residential, intense traffic and educational areas. The samples were fractionated into seven grain-size ranges (1000-2000, 600-1000, 300-600, 150-300, 75-150, 45-75, and <45 μm) and analysed for particle size distribution (PSD) and heavy metal concentration. Approximately, 50-80% of the total sediment mass was related to particles <300 μm . The maximum mean concentrations of zinc, lead, copper, nickel and cadmium were respectively 536.4, 422.4, 210.3, 96.6 and 22.8 mg/kg. Samples from the intense traffic area had the highest metal concentrations except for cadmium. For all analysed heavy metals the highest mean concentrations were found in the particle size fraction in the range of <45 to 75 μm .

KEYWORDS

Heavy metals, Land use type, Particle size distribution, Road-deposited sediment, Tehran