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MONITORING OF MERCURY FROM AIR AND URBAN DUST IN THE INDUSTRIAL AREA OF IASI MUNICIPALITY

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Abstract

The present work is dealing with the identification of the mercury sources and the quantification of the mercury level in air and urban dust in the industrial area of Iasi municipality. A correlation between some meteorological indicators, atmospheric mercury content and the urban dust from the investigated area was pointed out, based on the real time measurements as well as spatial distribution of other heavy metals in urban dust.

The measurements of mercury level in air were carried out at the five monitoring sites for 14 days in each month during the time period of November-December 2012, twice per day. Also, thirty-six roadway dust sampling sites were selected for investigation in the industrial area of Iasi city, comprising different types of pollution sources from transportation traffic with low and high density, as well as from industrial, residential and commercial areas. After statistical processing of data, two clusters have been noticed for gaseous elemental mercury present in the atmosphere: one with values between 10 – 21.37 ng/m³ due to heavy traffic and industrial activities (natural gas power plant, metallurgical producers, plastics manufactures), and another ranging between 4.3 – 14.5 ng/m³ generated by fuel combustion. Mercury concentration in roadway dust ranges between 0.18-0.70 mg/kg with an average of 0.48 mg/kg.

Key words: air pollution, gaseous elementary mercury, geochemical distribution, geographic information system, heavy metals

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