# CALIBRATION PROCEDURES FOR DETERMINATION OF ELEMENTAL CONCENTRATION IN AIR PARTICULATE MATTER, USING EDXRF TECHNIQUES

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**ABSTRACT**

Determination of elemental composition in atmospheric particulate matter (APM) can be very useful in identification and apportionment of different sources to the elevated levels of PM10 in urban conditions.

In the frame of the IAEA TC Project RER1/008, the application of nuclear and other relevant techniques is used to determine the PM10 elemental composition in a number of European countries, including Bulgaria. In order to study the PM10 variations in connection with elemental composition and the influence of meteorological conditions, five winter and summer campaigns were organized at NIMH, Sofia during 2012-2014. Because of the lack of suitable standards a set of so called "internal standards" was used for calibration of spectrometric systems, available in a XRF Laboratory, INRNE. Five real samples were sent out to three different laboratories in Krakow, Tirana and Zagreb. Based on the obtained values a calibration procedure was accomplished. The results of the participation in an Intercomparison test for PM10 filters from IAEA are also shown in order to check the calibration of the spectrometric systems.

**Key words:** EDXRF, PM10 measurement, elemental composition, air pollution

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