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The nuclear power in the service of the environment: Atmospheric trace element determination using neutron activation analysis

(2012) 2nd International Symposium on Environment Friendly Energies and Applications, EFEA 2012 PP. 523 - 528

<http://dx.doi: 10.1109/EFEA.2012.6294035>

ABSTRACT:

To evaluate today's trace element atmospheric concentrations in large urban areas, an atmospheric survey was carried out in Draria city nearby Algiers. Sampling was carried out using filter unit sampler at a sampling station in Draria city. The total suspended particulate matter (TSP) was collected continuously on nitrate cellulose filters. Instrumental Neutron Activation Analysis (INAA), based on nuclear properties of the elements to be determined is a method of choice in trace analysis in aerosol samples.

The measured concentrations were significantly lower than those found in Algiers city (urban site). In fact the typical urban background TSP and trace element values were compared with literature data. One will note that this air pollution varies considerably according to the components, in particular for Chromium (Cr), Antimony (Sb), Scandium (Sc), Cobalt (Co) and the traffic-related origin of the elements was demonstrated