

## Real-Time Determination of Anions and Cations in Aerosols by Ion Chromatography

**Research on air pollution requires rapid and accurate measurements of inorganic species in ambient air. Coupling a Particle-Into-Liquid-Sampler (PILS) to Metrohm's 850 Professional IC allows for quasi-continuous measurements with an unprecedented temporal resolution of just 5 to 15 minutes.**

### **Filters are only second choice**

The determination of anions and cations in atmospheric aerosols yields essential information concerning atmospheric transport and transformation processes. Until now these determinations have been carried out using filters. However, this method only allows to determine averages over a time span of 24 hours or even more. Moreover, the results can be compromised by desorption processes and chemical transformations.

### **Quasi-continuous measurements for superior precision**

In contrast to sampling devices relying on filters, using a PILS allows semi-continuous sampling of aerosols downstream from a denuder system. Subsequent to the removal of interfering gas-phase species, the remaining aerosol particles are dissolved into water phase by means of supersaturated steam. Eventually, the liquid sample is transported to the IC for analysis. The key benefit of this method is a high temporal resolution of measurements of just 5 to 15 minutes. Changes in the ionic composition of ambient air can thus be recorded almost immediately allowing a much more precise correlation with meteorological and other data.

