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[\[PDF \(1054K\)\]](#) [\[References\]](#)**Processing of the Signal from Detectors Used in Ion Mobility Spectrometry**[Wojciech DZIEWIECKI^{1\)}](#), [Sanna HOLOPAINEN^{2\)}](#), [Andrzej KNAP^{1\)}](#), [Marjaana NOUSIAINEN^{2\)}](#), [Boguslaw SIODLOWSKI^{1\)}](#), [Mika SILLANPÄÄ^{2\)3\)}](#) and [Jaroslaw PUTON^{1\)2\)}](#)*1) Institute of Chemistry, Faculty of Advanced Technologies and Chemistry, Military University of Technology**2) Laboratory of Applied Environmental Chemistry, Department of Environmental Sciences, University of Eastern Finland**3) Faculty of Technology, Lappeenranta University of Technology***(Received March 2, 2010)****(Accepted June 25, 2010)**

The output signal generated by detectors used in ion mobility spectrometry (IMS) is a time-dependent, small ionic current. To be able to take full advantage of information contained in this signal, adequate procedures of signal processing need to be utilized. Methods of spectrum filtration, peak separation, base-line correction as well as one- and two-dimensional integration applied in quantitative analysis are described. The effectiveness of the chosen methods was demonstrated on examples of experimental results obtained by IMS. Measurements were performed for spectra of reactant ions and sample ions generated by acetone, methyl *tert*-butyl ether (MTBE), dimethyl methylphosphonate (DMMP) and benzene. It was demonstrated that the proposed methods considerably improve the quality of the spectra, increase the selectivity of detection and reduce the uncertainty of quantitative measurements.

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