

Publication

Anion separations with pressure-assisted capillary electrophoresis using a sequential injection analysis manifold and contactless conductivity detection

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It is demonstrated that a hydrodynamic flow superimposed on the mobility of analyte anions can be used for the optimization of analysis time in capillary zone electrophoresis. It was also possible to use the approach for counter-balancing the electroosmotic flow and this works as well as the use of surface modifiers. To avoid any band-broadening due to the bulk flow narrow capillaries of 10 μ M internal diameter were employed. This was enabled by the use of capacitively coupled contactless conductivity detection, which does not suffer from the downscaling, and detection down to between 1 and 20 μ M for a range of inorganic and small organic anions was found feasible. Precisely controlled hydrodynamic flow was generated with a sequential injection manifold based on a syringe pump. Sample injection was carried out with a new design relying on a simple piece of capillary tubing to achieve the appropriate back-pressure for the required split-injection procedure.

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