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ENVIRONMENTAL ANALYSIS BY CAPILLARY ELECTROPHORESIS. ATMOSPHERIC SAMPLES

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Abstract

Complex separation and analytical techniques, like gas and liquid chromatography (GC, LC) and, more recently, capillary electrophoresis (CE) are developing and adapting their systems to respond to one major demand, the environmental analysis and monitoring. Different analytical methods used for atmospheric samples are comparatively presented and discussed. Although CE is suitable for hyphenated techniques, likewise GC and LC, by coupling with mass spectroscopy (MS), nuclear magnetic resonance (NMR), Raman spectroscopy, giving more specific identification information for environmental samples resolving, CE-MS techniques was not found to be specific for atmospheric compounds analysis. The paper presents capillary electrophoresis as a suitable tool for environmental analysis, with application for atmospheric aerosols. Introduction on CE principles and separation modes, as well as different electrophoretic buffers resolving ionic inorganic and organic compounds, are presented. A comparison between CE and ion chromatography (IC) is given.

Keywords: atmospheric aerosols, inorganic ions, low molecular weight carboxylic acids, HULIS, capillary electrophoresis

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