

Thesis Title Application of Flow Injection Analysis in Drinking Water Industry

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Abstract

Flow injection analysis (FIA) for chloride, sulfate, nitrate, nitrite, phosphate and iron in drinking water was investigated with the ions of using the same set of instrument but changing conditions of configuration from one to another analyte within a short period of time (within about 15 minutes). Reverse flow injection analysis (r-FIA) was applied. Reagents were injected into a flowing sample passing through a glass bead column. The product was continuously monitored spectrophotometrically. Conditions affecting the analytical results for each of the analytes were optimised, such as flow rate, reagent concentration, reagent volume, length of glass bead column. The results of the proposed methods for each of analyte agreed well with the ones obtained by using referred methods. Interferences in the proposed methods were studied. Detection limits for chloride, sulfate, nitrate, nitrite, phosphate and iron were 0.90, 6.00, 0.10, 0.10, 0.10 and 0.03 ppm. respectively. The precision (as relative standard deviation, RSD) was found to be 0.65-1.46 %.