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KEY WORD : ION CHROMATOGRAPHY/SULPHUR CONTAINING ANIONS ANALYSIS

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CONTAINING ANIONS BY ION CHROMATOGRAPHY. THESIS ADVISOR: ASSO.PROF.
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The analytical methods for determination of some anions containing sulphur atom namely sulphide , sulphite , sulphate , thiosulphate and thiocyanate by ion chromatography were investigated. Two types of anion exchange column , PRP-X100 and IC-PAK A were used throughout the experiments hydroxybenzoate solution, sodium benzenesulfonate solution and the solvent mixture system of gluconate-borate were employed. The various parameters for the suitable separation of these ions by each type of column e.g., the concentration and pH of the eluent , the amount of organic modifiers added and the flow rate were investigated. In addition, the interferences of common anions usually present in water for example , chloride , fluoride , bromide , iodide , nitrate and nitrite were also investigated. In this study, the optimal conditions for chromatographic separation applicable to the determination of these five anions simultaneously were the solvent system of gluconate-borate containing 1.0 mM gluconate, 1.1 mM borate, 90.0 mM boric acid, 54.0 mM glycerol, 0.02 mM EDTA disodium salt and 16.0 % acetonitrile , the IC-PAK A column, the pH value of 7.35 and the flow rate of 1.2 mL per minute. The accuracy and precision of the analyses are in the range of 93.75 to 99.88 % and 1.14 to 10.19 % respectively.