

Study on Preconcentration Methods for the Determination of Trace Elements

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1987 Fiscal Year Final Research Report Summary

Study on Preconcentration Methods for the Determination of Trace Elements

Research Project

Project/Area Number

61303007

Research Category

Grant-in-Aid for Co-operative Research (A)

Allocation Type

Single-year Grants

Research Field

分析・地球化学

Research Institution

Kanazawa University

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Keywords

Synergistic extraction / on-line extraction / synthesized chelating resins / complexing agents loaded silica gel / molecular bilayer assemblies / sorption-flotation method / capillary isotachopheresis / 超微量元素予備濃縮法

Research Abstract

(1) Synergistic extraction system, dithizone-TOPO, was applied to preconcentration of Cu(II). Synergistic extraction of RE elements using TTA and 1,10-phenanthroline was found to improve not only separation factor but extraction efficiency. The online extraction system was developed for ICP analysis of

trace metals. Extraction with chelating-agents mixture was used for simultaneous multi-elements extraction.

(2) Bio-Rad AG 1 resin was used for preconcentration of U and Mo from seawater. The series of chelating resins was developed and applied to enrich the rare metals. MBT/SG and thionalide/SG were used for concentration of Ag and Sb, respectively. Poly(chlorotrifluoroethylene) was found to adsorb many metal complexes and applied to speciation and preconcentration of trace metals in natural waters. "EXPAPIERF-2" was used for enrichment of Th, Zr, Fe, Sc, Y, Ga and RE elements.

(3) Metal preconcentration by molecular bilayer assemblies was studied.

(4) Amberlite XAD-2 resin treated with In(III) was used for preconcentration of humic complexes and coprecipitation-flotation technique was developed to measure the molecular weight distribution and adsorption ability of humic acid.

(5) Metal concentration with non-aqueous isotachopheresis was studied for separation of heavy metal ions after extraction of the DDTC chelates into nitrobenzene.

Research Products (28 results)

All Other

All Publications (28 results)

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