〔J. Chromatogr., **515**, 213 (1990)〕

Constant-Potential Amperometric Detector for Carbohydrates at a Nickel (III) Oxide Electrode for Micro-Scale Flow-Injection Analysis and High-Performance Liquid Chromatography.

MASASHI GOTO*, HIROYOSHI MIYAHARA, DAIDO ISHII

A constant-potential amperometric detector for carbohydrates based on an oxidation at an active nickel (III) oxide electrode for micro flow-injetion analysis and micro high-performance liquid chromatography was developed. The active nickel(III) oxide is formed *in situ* on the electrode surface at potentials near ca. 0.5 V *vs.* Ag/AgCl. The nickel(III) surface acts as a strong oxidant and reacts with carbohydrate by hydrogen atom abstraction to yieald a radical. A micro tubular-type electrolytic cell was constructed and the cell was successfully applied to the detection of various sugars, sugar alchols etc.

〔Anal. Chim. Acta, **235**, 399 (1990)〕

Speciation of Mercury Compounds in Waste Water by Microcolumn Liquid Chromatography Using a Preconcentration Column with Cold-Vapour Atomic Absorption Spectrometric Detection.

EDISON MUNAF, HIROKI HARAGUCHI, DAIDO ISHII, TOYOHIDE TAKEUCHI, MASASHI GOTO*

A microcolumn liquid chromatographic method with cold-vapour atomic absorption spectrometric detection was developed for the speciation of mercury compounds in waste water. The sample solution containing mercury at 4 ng level was injected onto a micro preconcentration column packed with silica-ODS and eluted with cysteine-acetic acid through a separation column (125 mm × 0.5 mm i. d.) packed with silica-ODS. Mercury(II) chloride, methylmercury chloride and ethylmercury chloride, were well resolved and the determination was completed in less than 16 min. The method was successfully applied to the speciation of mercury compounds in waste water.

〔Anal. Sic., **6**, 313 (1990)〕

Digestion Method for the Determination of Merucry in Continuous Microflow Analysis.

EDISON MUNAF, TOYOHIDE TAKEUCHI, MASASHI GOTO*, HIROKI HARAGUCHI, DAIDO ISHII

The digestion method for the determination of total mercury in the environmental water was investigated by using continuous microflow analysis technique. Different acidification methods were tested for the determination of the total mercury content in water samples. Nearly same response signals were observed for nitric acid, hydrochloric acid and mixtures of these acids when the concentration of mercury was the same. When sulfuric acid was used the response of the obtained mercury was about 85%, compared with above mentioned acids. On the other hand, the signal was only 28% without acidification under the experimental conditions.