

STUDI OPTIMASI KROMIUM (VI) DALAM AIR LAUT SECARA VOLTAMMETRI STRIPPING ADSORPTIF

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ABSTRACT

Study of optimization chromium (VI) in sea water by adsorptive stripping voltammetry has been done. The aim of this method to get optimum conditions for determination of Cr(VI). Adsorptive stripping voltammetry (AdSV) has been used for the ultra trace determination of chromium using 2,2'-bipyridin as ligand. Parameters were done, like accumulation time, concentration of ligand, pH, accumulation potential, electrolyte concentration and catalyst concentration. In this case, the optimum conditions were reached in accumulation time 80 second, pH 5.0, concentration of 2,2'-bipyridin 10 μM , accumulation potential -0,6 Volt and electrolyte concentration (NH_4Cl) 0,1 M. In the optimum conditions, a linear calibration graph was obtained with correlation coefficient of 0.9971, the relative standard deviation was 15.06 % for eight replicates ($n = 8$) measurements of 10 $\mu\text{g/L}$ of Cr(VI). The detection limit method was 0.1692 $\mu\text{g/L}$. The method was applied to the direct determination of Cr(VI) in sea water around Muara Padang water. Concentration Cr(VI) in sample was equal to 0.9684 $\mu\text{g/L}$ with recovery of 90.23 %.

Keywords : *optimization, chromium, adsorptive, stripping, voltammetry*

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