

ABSTRACT

SIMULTANEOUS DETERMINATION OF Cd(II), Pb(II) BY ADSORPTIVE STRIPPING VOLTAMMETRY (AdSV) USING OF CALCEIN AS COMPLEXING AGENT

By:

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Simultaneous determination of Cd(II), Pb(II) by adsorptive stripping voltammetry (AdSV) had been conducted. This method based on adsorptive accumulation of Cd(II)-calcein, Pb(II)-calcein complexes onto hanging mercury drop electrode (HMDE). Followed by reduction of adsorptive species onto work electrode. The Optimum conditions were achieved at calcein concentration 0.7 mM, pH 4, accumulation time 80 second and accumulation potential -0.7 V. This method has been applied to examine Cd(II) and Pb(II) in tap water, Batu Busuk, Limau Manis river and sea water of Padang beach. Concentration of metal ion in tap water was obtained Pb(II) 78.329 μ g/L and Cd(II) undetected. For Batu Busuk, Limau Manis river was obtained Pb(II) 64.831 μ g/L, Cd(II) undetected and for sea water of Padang beach was obtained Pb(II) 129.902 μ g/L and Cd(II) undetected. Relative standard deviation was obtained for each metal Cd(II) 1.29%, Pb(II) 2.28% and recovery was obtained Pb(II) 103.25% and Cd(II) 97.85%.

Keyword: Adsorptive stripping voltammetry, calcein, cadmium, lead

