

Habibah, K.A., 2019, “Modification of Carbon Paste Electrodes / Gold Films (CPE/Au Film) as Mercury Sensors by Voltammetry“, this script is under guidance of Dr. Muji Harsini, M.Si dan Dra. Aning Purwaningsih, M.Si, Departement of Chemistry, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

In this study a voltammetric mercury analysis method was developed using carbon paste electrode modified with gold film (CPE /Au Film) using cyclic voltammetry (CV) technique. Analysis of mercury was carried out in supporting electrolyte solutions HNO₃ + KNO₃ 0.1 M in the potential range -1.0 V to +0.5 V using differential pulse stripping voltammetry (DPSV) technique. The electrochemical properties of the CPE /Au Film surface for the analysis of mercury were obtained with optimum conditions at 60s deposition time and scan rate of 100 mV / s. Selectivity of CPE /Au Film for mercury analysis was carried out by measuring mercury against the influence of several other metal ions. The results of the validity of the mercury analysis method with the DPSV technique in this study have linearity 0.993, sensitivity 2.238 $\mu\text{A} / \text{ppb}$, limit of detection 0.868 ppb, accuracy range 89.49% -107.39% and precision range 0.0795% - 1.03%.

Kerwords: *voltammetry, mercury, carbon paste electrode, gold film.*