O 74. TRACE ELEMENT DETERMINATION BY ELECTROCHEMICAL METHODS

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ABSTRACT: Today, heavy metals emitted to the environment have been the subject of research to cause both environmental problems and health problems. Therefore, a simple, fast and effective method for the determination of trace amounts of heavy metals has been developed. Among the techniques developed, electrochemical methods (cyclic voltammetry, differential pulse voltammetry, chronoamperometry, electrochemical impedance spectroscopy, etc.) are the most powerful and sensitive method for heavy metal detection (Khadro et.al.2011; Wassana et.al.2007). Moreover, these methods are cheap, sensitive, rapid and portable (Pujol et.al.2014). The advantage of anodic stripping technique is the pre-concentration step, which enables such low concentration analysis. Therefore, different nanomaterials with high adsorption capability and catalytic activity are usually used for electrochemical detection of heavy metals. Ferrite nanoparticles has attracted great attention for high adsorption capacity and magnetism. In this study, $NiFe_2O_4$ based modified glassy carbon electrode was developed to detect copper (Cu^{2+}) and mercury (Hg^{2+}) by differential pulse voltammetry.

Keywords: Differential pulse voltammetry, Trace metal detection, Cu^{2+}, Hg^{+2}.

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