



SIMULTANEOUS VOLTAMMETRIC DETECTION OF ORGANICS FROM WASTEWATER ON A COPPER OXIDE-COPPER ELECTRODE

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Abstract

The amperometric response in dynamic or fixed potential conditions, as cyclic voltammetry (CV) and chronoamperometry (CA) of a copper oxide-copper electrode was studied and proposed for the fast characterization of the simulated wastewaters containing acetylsalicylic acid (ASA) and sulfur compounds, i.e., thioacetamide (TA) as organic pollutant models. The additivity of the individual amperometric signals in the overall response of the electrode for mixed solutions corresponded to over 95% recovery degree. Some supplementary considerations on the qualitative and quantitative determination were underlined. The sum amperometric signal could be proposed and used as a easy accessible characterization parameter of organic load from wastewaters and a substituent of classical, time-consuming and poorly recovered COD (chemical oxygen demand). In this way, the copper oxide-copper electrode offered a very cheap support for the practical purposes, e.g., wastewater characterization.

Keywords: copper oxide-copper electrode, organic load, electrochemical detection, voltammetry, chronoamperometry
