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Electrochemical Investigation of 4'-Haloderivatives of N,N-Dimethyl-4-Aminoazobenzene

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Abstract: In this study, the electrochemical behaviour of 4' -halogene-N,N-dimethyl-4-aminoazobenzene derivatives were investigated using various polarographic and voltammetric methods. The peak potentials of these derivatives were observed to shift towards negative values with increase in pH. The standard rate constants were determined with (Laviron technique) or without (Nicholson and Klingler-Kochi techniques) taking the adsorption phenomena into account. The diffusion coefficients were calculated from the cyclic voltammetric data using the method developed by Garrido. The amount of adsorbed substances (surface excess values) and transfer coefficients for the electron transfer were also determined. These compounds can be quantitatively determined between 1 x 10^{-5} M to 2 x 10^{-7} M with DPP.

Key Words: Azo compounds, polarography, cyclic voltammetry, rate constant, adsorption.

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