Substituent and Solvent Effects on the Electrochemical Oxidation of *para*- and *meta*-Substituted Anilines

Durvas S. Bhuvaneshwari and Kuppanagounder P. Elango

Department of Chemistry, Gandhigram Rural Institute (Deemed University), Gandhigram 624 302, India

Reprint requests to Dr. K. P. Elango. E-mail: drkpelango@rediffmail.com

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Electrochemical oxidation of fifteen *para*- and *meta*-substituted anilines in different mole fractions of acetic acid in water has been investigated in the presence of 0.1 M sulphuric acid as supporting electrolyte. The oxidation potential data of anilines correlates well with Hammett's and Brown-Okamoto's substituent constants affording negative reaction constants. The effect of *para*- and *meta*-substituents on the oxidation potential conforms to Swain's F and R parameters, affording negative reaction constants. The oxidation potential values correlate well with macroscopic solvent parameters such as relative permittivity, ε_r, and polarity, $E_T{}^N$. Multiple correlation analysis also shows an excellent correlation with the oxidation potential values.

Key words: Solvent Effect, Aniline, Electrochemical Oxidation, Cyclic Voltammetry