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Polarographic Studies on the Kinetics of the Electrode Reaction of 4-Benzoyl-1,5 Diphenyl Pyrazole-3-Carboxylic Acid

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Abstract: The polarographic behavior of 4-Benzoyl-1,5 diphenyl pyrazole-3- Carboxylic acid (BDPPCA) in aqueous ethanol solution (76 % v/v) at 25°C was studied as a function of pH using Mcl buffer solution. One well-defined wave was obtained in the pH range of 3.3-5.4. This wave, corresponding to two electron reduction processes, was irreversible and diffusion controlled. However, in the pH range of 5.4-7.4 a single reversible and diffusion-controlled wave involving two electrons resulted. The kinetic parameters (n_a , $k_{f,h}^0$) were calculated by Koutecky's method. A tentative mechanism was put forward for the reduction process of depolarizer. Furthermore, the effects of different supporting electrolytes on the kinetics of the irreversible electrode reaction of BDPPCA were investigated.

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