

Effect of Poly(o-aminophenol) film on silver electrodeposition on Platinum Electrode
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Electrodeposition of silver on a poly(o-aminophenol) modified platinum electrode was studied by chronoamperometry and voltammetry techniques in aqueous solutions, at different pH values. Results reveal that electrodeposition process occurs in the polymer-electrode interface and the polymer is rather indifferent to the silver electrodeposition. This is because of the low conductivity of the film at potentials where crystallization take place. Experimental transients indicated that at very short times, the process follows a three-dimensional and progressive nucleation patterns with diffusion controlled growth.

longer applicable. Formation of silver-polymer aminocomplexes may take place and further studies must be done.

References

[1] B. Scharifker, G. Hill, *Electrochimica Acta.* 28 (1983) 879.

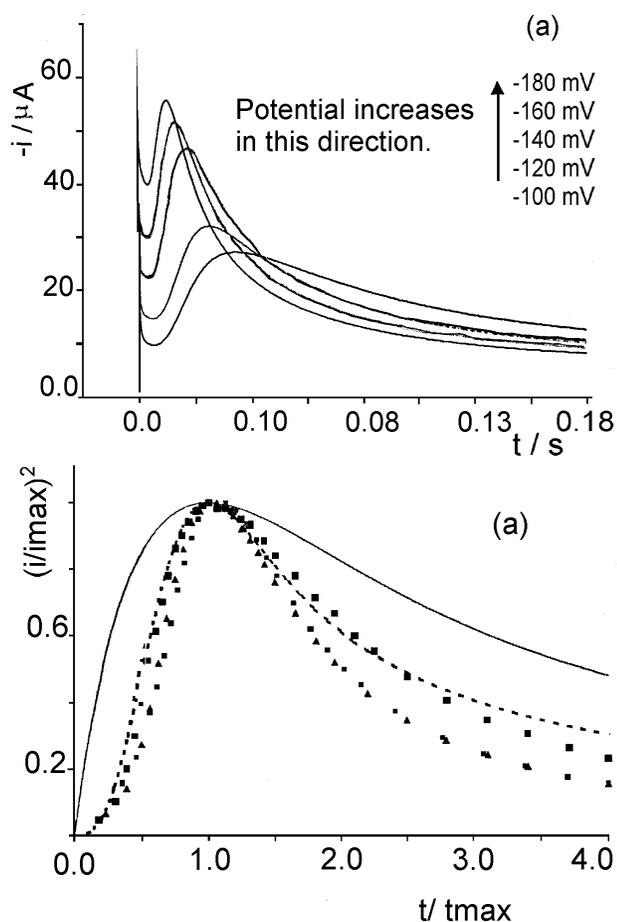


Figure 1.- Upper plot :Set of potentiostatic transients for the electrodeposition of silver on polymer modified Pt electrode at pH 1.0 and 10 celsius degree. All potentials started at 0.00 V Ag/Ag+ and final potentials are represented in the upper right corner of the first plot. Down: Dimensionless plots for the experimental curves. Points represent normalised experimental data at different potentials steps. Progressive (----) and instantaneous limiting cases.

At pH 5, polymer conductivity is minimum and experimental results collapse in the dimensionless plot. It is possible that a low pH, silver ions compete against protons for nitrogen sites so that silver-nitrogen interaction is favored and the corresponding transient is a mixed system in which the Scharifker model [1] is not