

Reaccion acido-base en estado excitado. Salicilamida en soluciones acuosas

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In this work we propose a kinetic model for the reaction between the neutral and anionic species in the first singlet electronic excited state of salicylamide in aqueous solution. The radiative rate constants (k_{01} , k_{02}) and nonradiative transfer constants (k_{21} $k_{12}[\text{H}^+]$), are calculated employing the methodology of Global Analysis of lifetimes data of salicylamide in aqueous solution to pH 2.0, 2.7 and 3.0, determined by means of the multifrequency of phase shift and modulation technique. The validity of the kinetics model is tested evaluating the lifetimes (τ_1 and τ_2) in function of the proton concentrations and the rate constants k_{ij} determined by the model. The values τ_1 and τ_2 calculated agree with the experimental data in the pH (1.7 to 10) range studied. The acidity (K^*a) of first excited electronic state is calculated by means of the ratio between the rate constants of transfer for the neutral and anionic species. The measured K^*a agree with K^*a determined by means of the thermodyna