The Study of Buffer Solutions Effect on The Formation of Co(II), Ni(II) and Fe(III) Complexes with 4-(2-Pyridylazo) Resorcinol Aqua Solution

K. Guerfi, H. Bendjeffal, M. Zeggar, Y. Bouhedja

Department of Chemistry, University of Annaba, B.P. 12 Sidi Amar Annaba (23000), Algeria.
K_guerfi@yahoo.fr

Since 1960, the formation of the complexes of the 4-(2-pyridylazo) resorcinol “PAR” with transition metals has been extensively studied in various anhydrous and aqueous media [1-2]. S. G. Nagarkar and M. C. Eshwar have realized a spectrophotometric determination of Zirconium(IV) with the 4-(2-Pyridylazo)-resorcinol in aqueous solution[3]. Chiyo Matsubara and col used Ti(IV)-PAR complex for the determination of trace amounts of hydrogen peroxide and sulfite as food additive. Also, an extraction of Pd(II)-PAR complex into molten naphthalene at 90°C has been realized by Yanjie Dong and Ke Gai [4-5].

In the present work, we have studied the effect of temperature and buffer–water systems {HPW (HCl/KCl/Water), ASW (H$_3$COOH/CH$_3$COONa/Water) and AAW (NH$_4$OH/NH$_4$Cl/Water)} on the formation and the stability of complexes species of Co(II), Ni(II) and Fe(III) with the salt of 4-(2-pyridylazo)-resorcinol “PAR”. The stability constants, stoichiometric coefficient “n”, and thermodynamic parameters ($\Delta G^\circ$, $\Delta H^\circ$ and $\Delta S^\circ$) of each complex have also been determined [7].

REFERENCES