

ONIUM METHOD FOR EXTRACTION AND SPECTROPHOTOMETRIC DETERMINATION OF ZN (II) AND CO (II)

SHAWKET KADHIM JAWAD & JIHAN RAZZAQ MUSLIM

Department of Chemistry, College of Education for Girls, Iraq

ABSTRACT

UV-Vis. spectrum for complexes of Zn (II) and Co (II) extracted according to onium system from acidic HCL solution by use 2,4-dimethylpentan-3-one (2,4-DMP) as onium complex was (262nm) for Zn(II) but onium complex for Co(II) was (243nm), this method show need 0.5M HCL for extraction Zn^{2+} and 0.8M HCL for Co^{2+} , as well giving obey to Beer-Lambert relation at the (1-20 μ g) for Zn^{2+} and (1-50 μ g) for Co^{2+} . The onium complex extracted have structure $H(H_2O)(2,4-DMP)_3^+;HZnCl_4^-$, $H(H_2O)(2,4-DMP)_3^+;HCoCl_4^-$. This method obey to Beer-Lambert relation at the range (1-20 μ g) for Zn^{2+} $\epsilon=16893.56L.mol^{-1}.cm^{-1}$, D.L= $6.33 \times 10^{-6} \mu$ g/ML, RSD%=0.0069 μ g/ML, Sandell's sensitivity= $3.87 \times 10^{-9} \mu$ g/cm² and (5-50 μ g) for Co^{2+} , $\epsilon=8918.77L.mol^{-1}.cm^{-1}$, D.L= $3.38 \times 10^{-5} \mu$ g/ML, RSD%=0.00664 μ g/ML, Sandell's sensitivity= $7.33 \times 10^{-9} \mu$ g/cm². As well as this research involved many studies and apply for determination Zn^{2+} and Co^{2+} in different samples.

KEYWORDS: Onium Species, Zinc, Cobalt, Spectrophotometric Determination