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ONIUM SYSTEM APPLICATION FOR SEPARATION AND MICROAMOUNT DETERMINATION OF ZINC (II) BY USE METHYL STEARATE

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ABSTRACT

As sensitive application method of solvent extraction used onium system for extraction Zinc ion Zn^{2+} from acidic aqueous solution of HCl as oxonium species by used Methyl Stearate ester as sensitive extract ant dissolved in chloroform at 1×10^{-3}molar concentration, the study show extracted species giving maximum absorbance at wave length λ_{max} =275nm in presence 1M HCl with shaking time equal to 25 min. so that the study appear extraction efficiency differ with organic extract ant used whereas 2,4-Dimethyl -3- pentanone giving higher extraction efficiency ,electrolyte effect study show there is enhancement in extraction efficiency in presence electrolyte salt in aqueous solution as well as foundation 30% methanol in aqueous solution effect to increase extraction efficiency. Thermodynamic study appear the extraction behavior was endothermic giving maximum increasing in extraction at 40°C with thermodynamic data ΔH_{ex} =0.068 kJ.mol^{-1} and ΔG_{ex}= -53.95 kJ.mol^{-1} ΔS_{ex}= 172.58 J.mol^{-1}.K^{-1} .The study included also organic solvent effect and spectrophotometric determination of Zn^{2+} in different samples by used calibration curve appear good linearity from (1-10) ppm and molar absorptivity ε=7861.45L.mol^{-1}.cm^{-1}, RSD% (n=3)=0.00545 and standard deviation=0.0728, Sandal's sensitivity= 0.00832µg.cm^{-2}.

KEYWORDS: Extraction of Zn^{2+} Ion, Solvent Extraction Method, Onium System