



Sorption Study of Nickel(II) in Glycine Medium Using Poly[dibenzo-18 crown-6] and Column Chromatography

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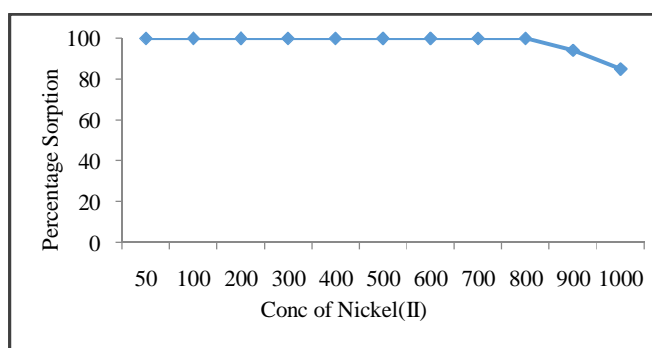
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ABSTRACT

A simple chromatographic separation method has been developed for quantitative sorption of Ni(II) from an aqueous solution of 1×10^{-3} M Glycine using poly [dibenzo-18-crown-6] as stationary phase. The sorption of Ni(II) was quantitative 1×10^{-2} M to 1×10^{-6} M Glycine. The elution of Ni(II) was quantitative with 0.1–8.0 M HCl, 7.0-8.0M HClO₄, 5.0-8.0 M HBr M 0.1-8.0 M H₂SO₄ and 2.0-8.0M CH₃COOH The capacity of poly [dibenzo-18-crown-6] for Ni(II) was found to be 3.15 ± 0.01 mmol g⁻¹ of crown polymer. The effects of concentrations of Glycine, Ni(II), foreign ions and eluents have been studied. Ni(II) was separated from a number of cations in multi component mixtures. The applicability of the proposed method was ascertained for the determination of Ni(II) in real samples. The reliability of method was checked by comparison of the results with those obtained using flame photometer. The method is very simple, rapid and selective with good reproducibility (approximately $\pm 2\%$).

Graphical Abstract



Effect of varying concentration of Ni(II)

Keywords: Sorption, Separation, Ni(II), Glycine, poly [dibenzo-18- crown-6], Chromatography.