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Spectrophotometric determination of Co(II) in various samples by Solid phase Extraction using Chemically Modified SiO_2-PAN Nanoparticles

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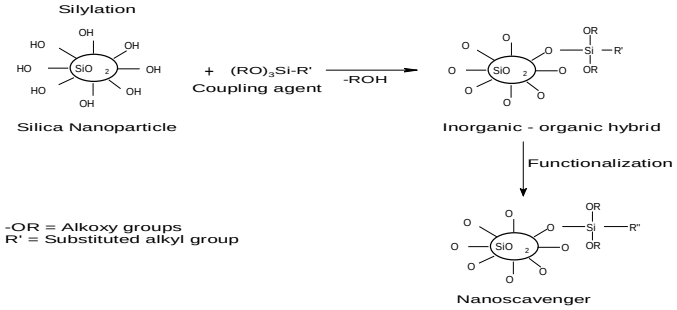
ABSTRACT

The present paper reports on the application of modified silica Nanoparticles with PAN as a new, easily prepared and stable sorbent for the preconcentration of trace Co(II) metal ion. Factors influencing the sorption and desorption of Co(II) were investigated. The effects of experimental parameters, including the sample pH, sorbent amount, shaking time, sample volume of solution, adsorption capacity and preconcentration factor has been studied. The adsorption equilibrium of Co(II) on nanometer SiO_2-PAN was achieved within 10min. Adsorbed Co(II) was easily eluted with 7mL of 5M hydrochloric acid. The maximum preconcentration factor has been found to be 50. The method was developed for the estimation of trace amounts of Co(II) in various samples.



Keywords: Nanoparticles, preconcentration, surface modifications, PAN {1-(2pyridylazo)-2-naphtol}.
