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SPECIATION OF METAL IONS BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHIC TECHNIQUE

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Speciation of metals is of increasing interest and importance because bioavailability, environmental mobility, toxicity and potential risk of metals in general is strongly dependent on the chemical species of metals. With the capability of partitioning the complex species of different metal ions, high performance liquid chromatography (HPLC) is a model concert for this task. We have done the speciation of chromium ion as well as phenyltin species with the help of pre-concentration technique (Fabric phase sorptive extraction method) via high performance liquid chromatography. A preconcentration technique is indispensable due to the presence of various metal ions in environmental water at trace levels. Fabric phase sorptive extraction (FPSE), a relatively new but promising sample preparation technique, was applied to preconcentrate complex from water samples. Efficient extraction of the metal complex from aqueous samples has been accomplished by applying FPSE using a cellulose fabric substrate coated with sol-gel C18 hybrid nano-composite sorbent. The new FPSE-HPLC-UV method can be used for the routine screening of metal ions in various water samples with high sensitivity, precision and reliability.