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Reduction Study of As(III)-Cysteine Complex through Linear Sweep Voltammetry

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Abstract : A simple voltammetric technique for on-line analysis of arsenite [As (III)] is reported. Owing to the affinity of As (III) with thiol group of proteins and enzymes, cysteine has been employed as reducing agent. The reduction study of As(III)-cysteine complex on indium tin oxide (ITO) electrode has been explored. The experimental parameters such as scan rate, cysteine concentration, pH etc. were optimized to achieve As (III) determination. The developed method provided dynamic linear range of detection from 0.1 to 1 mM with a detection limit of 0.1 mM. The method is applicable to environmental monitoring of As (III) from highly contaminated sources such as industrial effluents, wastewater sludge etc.

Keywords : arsenite, cysteine, linear sweep voltammetry, reduction
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