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Extractive Spectrophotometric Determination of Osmium (VIII) using p-methylphenylthiourea as a Chromogenic reagent: Sequential Separation of Palladium, Osmium and Platinum

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Simple, rapid and sensitive solvent extraction and spectrophotometric determination method has been developed for the determination of Os(VIII) using P-Methylphenyl Thiourea (PMPT) as an analytical reagent. PMPT has been synthesized and characterized by spectral analysis. PMPT extracts Os(VIII) quantitatively into chloroform from perchloric acid media. The chloroform extract shows an intense peak at 512 nm (λ max). Beer's law is obeyed over the Os(VIII) concentration range of 60 $\mu\text{g/mL}$. The molar absorptivity and Sandell's sensitivity for Os(VIII)-PMPT system is $6.826 \times 10^3 \text{ L mol}^{-1} \text{ cm}^{-1}$ and 0.028 $\mu\text{g cm}^{-2}$ respectively. The composition of extracted species is found to be 1:1 (Os(VIII): PMPT) by slope ratio method, job's continuous variation and mole ratio method. Interference by various ions has been studied. The proposed method has been successfully applied for determination of Os(VIII) in synthetic samples. Sequential separation of Palladium(II), Osmium(VIII) and Platinum(IV) is carried out by using proposed method.

Biography

Haribhau R Aher has completed his PhD from Pune University. He is working as an Assistant Professor at Department of Chemistry, P V P College, Pravaranagar. He has 26 research papers in national and international journals to his credit.

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