

## A Green Method for Selective Spectrophotometric Determination of Hafnium(IV) with Aqueous Extract of Ficus carica Tree Leaves

**Authors :** A. Boveiri Monji, H. Yousefnia, M. Haji Hosseini, S. Zolghadri

**Abstract :** A clean spectrophotometric method for the determination of hafnium by using a green reagent, acidic extract of *Ficus carica* tree leaves is developed. In 6-M hydrochloric acid, hafnium reacts with this reagent to form a yellow product. The formed product shows maximum absorbance at 421 nm with a molar absorptivity value of  $0.28 \times 10^4 \text{ l mol}^{-1} \text{ cm}^{-1}$ , and the method was linear in the 2-11  $\mu\text{g ml}^{-1}$  concentration range. The detection limit value was found to be 0.312  $\mu\text{g ml}^{-1}$ . Except zirconium and iron, the selectivity was good, and most of the ions did not show any significant spectral interference at concentrations up to several hundred times. The proposed method was green, simple, low cost, and selective.

**Keywords :** spectrophotometric determination, Ficus caricatree leaves, synthetic reagents, hafnium

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