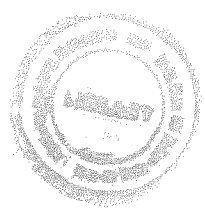
Preparation of a Hydroxamic acid linked Anthracene chromophore for the analysis of metal ions at trace level.

By

BALASOORIYAGE SAMANTHI LEONI PERERA.

Dissertation submitted in partial fulfillment of the requirements for the degree of M.Sc. in Analytical Chemistry of the University of Colombo, Sri Lanka.

September 2000.



Abstract

A hdroxamic based fluoroionophore was synthesized using anthraldehyde as the starting material. This probe is weakly pH dependent. Metal ions such as Fe(III), V(V), Cu(II), Mn(II) and Ti(IV) are capable of quenching the fluorescence emission of this probe. Cu(II) was observed to be the most sensitive. Since spectral changes of this probe are pH dependent, several metals can be co-determined by varying the pH alone. It was found that at pH =3, Fe(III) can be co-determined with Zn(II), where the strength of Zn(II) can be as high as twenty-five times the Fe(III) concentration. Anions such as PO_4^{-3}, F^-, SO^{-2}_4, Cl^- and NO^-_3 do not cause any detectable interference, in the emission of the unbound probe.