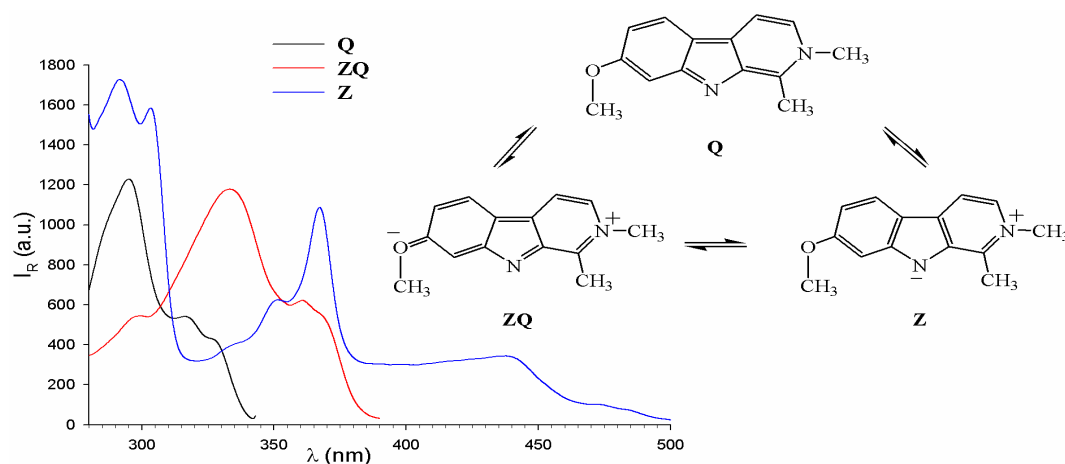


Ground state Isomerism and Dual Fluorescence of 2-Methylharmine Anhydronium Base (7-Methoxy-1, 2-dimethyl-2H-pyrido[3,4-b]indole) in Aprotic Solvents

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Ground state isomerism and dual fluorescence of 2-methylharmine anhydronium base (7-methoxy-1, 2-dimethyl-2H-pyrido[3,4-b]indole), HIAB, in aprotic solvents have been studied using electronic absorption, steady state and time resolved fluorescence spectroscopic techniques. The solvent polarity and the emission wavelength dependence of the fluorescence excitation spectra conclusively show the existence of ground state equilibria between three HIAB isomeric species, namely Q, Z and ZQ.



The solvent polarity and the excitation wavelength dependence of the steady state and time resolved fluorescence decays reveal that the HIAB isomers can emit dual fluorescence from a locally, LE, and an intra molecular charge transfer, ICT, excited states. According to the proposed mechanism, the ZQ isomer simultaneously emits from its LE and ICT states, while Q and Z exclusively emit from their LE and ICT states, respectively.