# Supporting Information

# for

# Fluorometric recognition of both dihydrogen phosphate and iodide by a new flexible anthracene linked benzimidazolium-based receptor

Kumaresh Ghosh[*§] and Debasis Kar

Department of Chemistry, University of Kalyani, Kalyani-741235, India.

Email: Kumaresh Ghosh - ghosh_k2003@yahoo.co.in

[§]Fax: +913325828282; Tel: +913325828750

*Corresponding author

## Supplementary Data

### 1. Absorption spectra

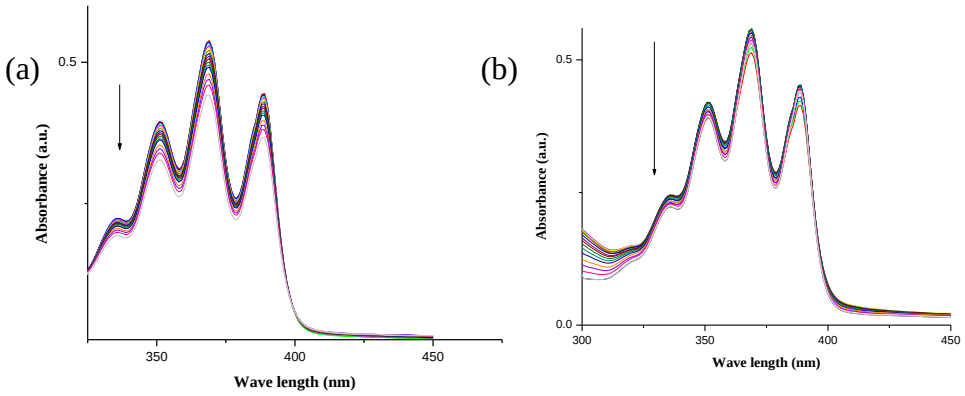


**Figure 1S:** Change in absorption spectra of **1** ($c = 5.78 \times 10^{-5}$ M) on titration with (a) $F^-$ and (b) $I^-$.

## 2. Fluorescence spectra

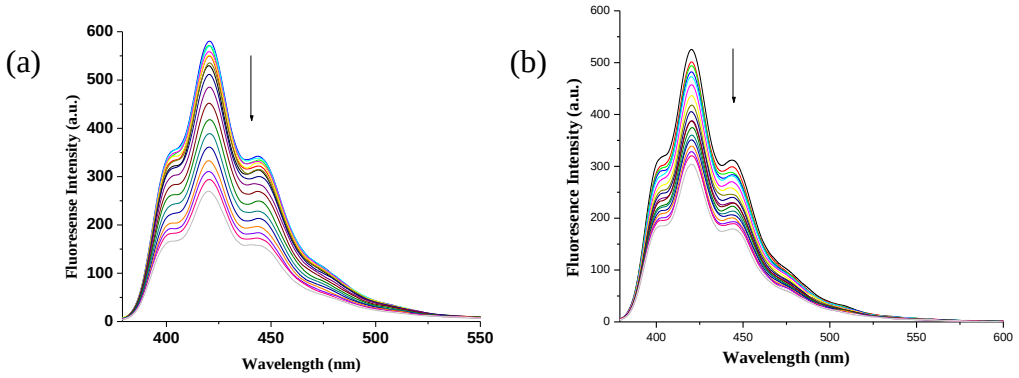


**Figure 2S:** Change in emission spectra of **1** ($c = 5.78 \times 10^{-5}$ M) on titration with (a) $F^-$ and (b) $I^-$ in $CH_3CN$.

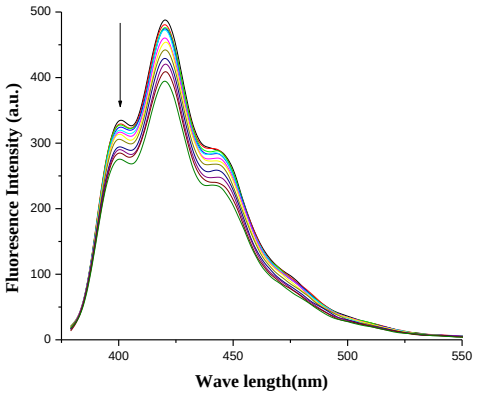


**Figure 3S:** Change in emission spectra of **2** ($c = 5.78 \times 10^{-5}$ M) in presence of increasing amounts of tetrabutylammonium dihydrogen phosphate in $CH_3CN$.

## 3. Fluorescence Job plots in $CH_3CN$.

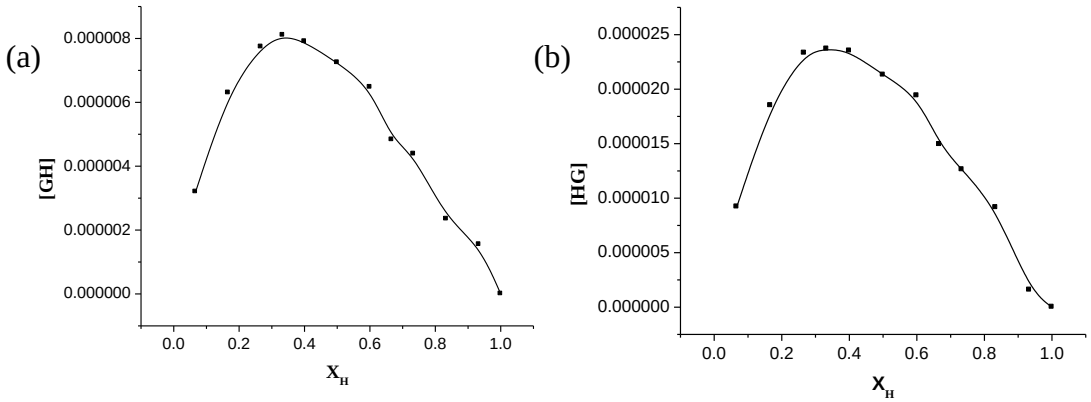


**Figure 4S:** Fluorescence Job plots for **1** with (a) fluoride and (b) iodide.

## 4. UV–vis titration curves for 1 with the anions in $CH_3CN$.

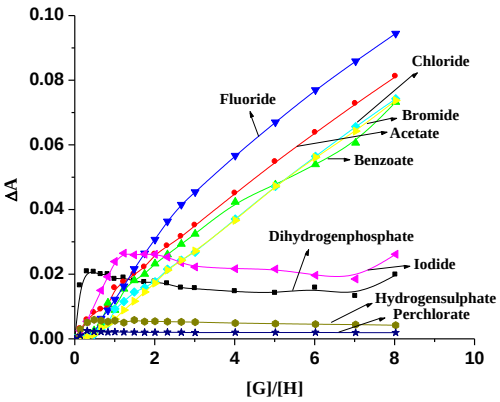


**Figure 5S:** Plot of change in absorbance of **1** at 369 nm vs the ratio of guest to host concentration in $CH_3CN$.

## 5. Binding constant curves

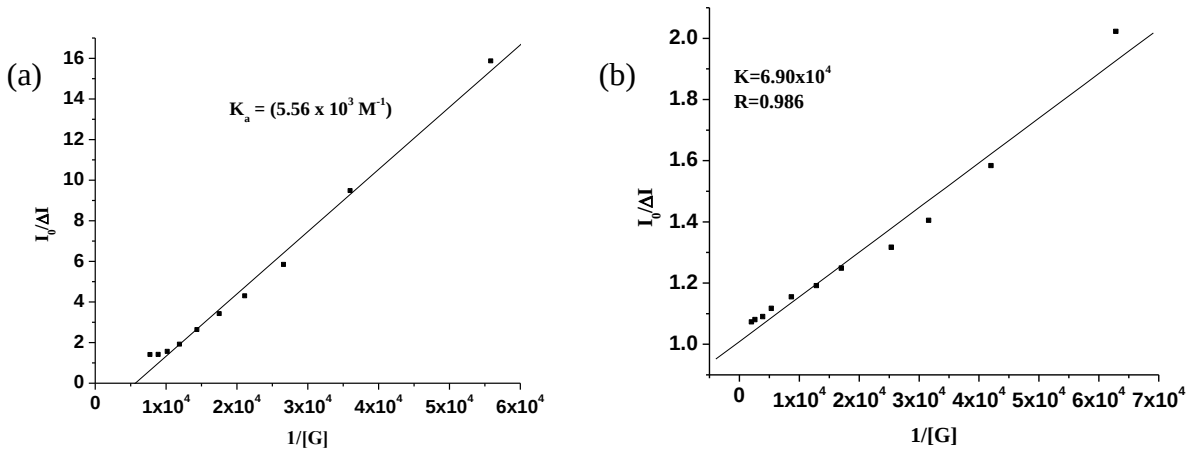


**Figure 6S:** Binding constant curves for **1** with (a) $H_2PO_4^-$ in $CH_3CN$ and (b) iodide in $CHCl_3$ containing 0.1% $CH_3CN$.

## 6. Change in emission of 1 in aq $CH_3OH$ ($CH_3OH$:$H_2O$ = 4:1 v/v).

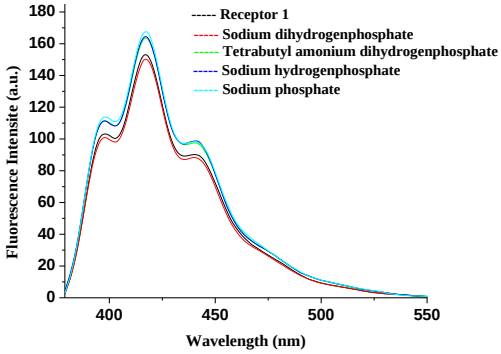


**Figure 7S:** Change in fluorescence emission of **1** ($c = 2.46 \times 10^{-5}$ M) in the presence of 1 equiv of the salts of different guests in aq $CH_3OH$.

## 7. (a) Fluorescence titration curves for 1 with the anions in $CHCl_3$ containing 0.1% $CH_3CN$.

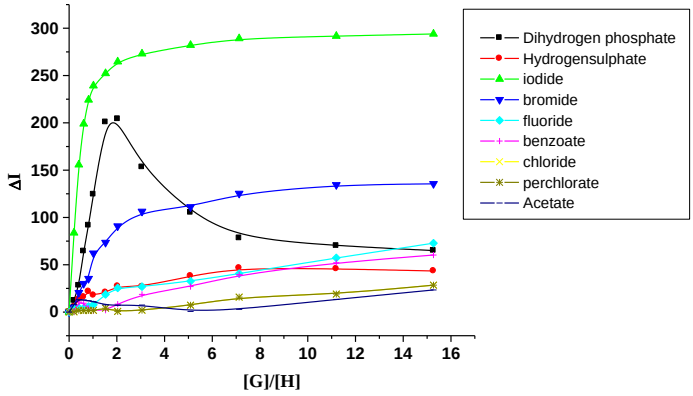


**Figure 8S:** Plot of change in emission of **1** at 420 nm vs the ratio of guest to host concentration.

## (b) Fluorescence titration curves for 2 with the anions in $CHCl_3$ containing 0.1% $CH_3CN$.

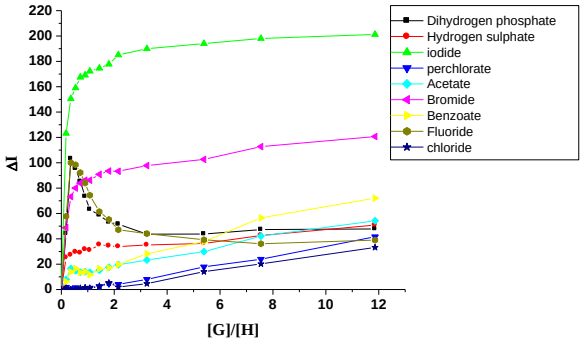


**Figure 9S:** Plot of change in emission of **2** vs the ratio of guest to host concentration.

## 8. Fluorescence Job plots anions in $CHCl_3$ containing 0.1% $CH_3CN$.

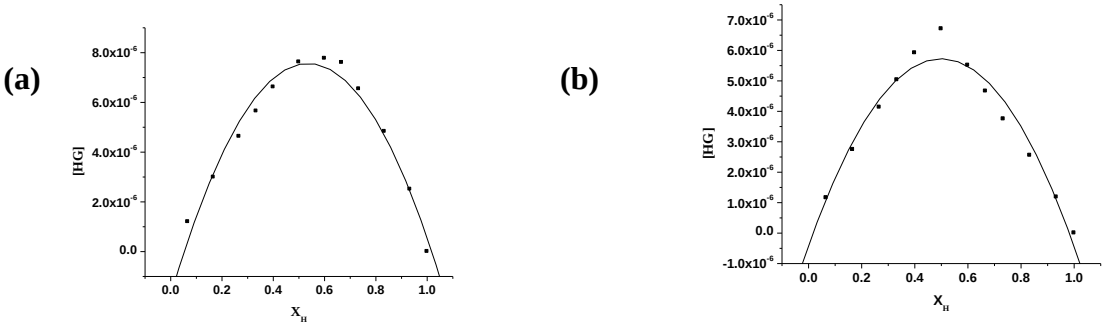


**Figure 10S:** Fluorescence Job plots for **1** with (a) iodide and (b) dihydrogen phosphate.

## 9. Change in $^1$H NMR of 1 in the presence of $F^-$.

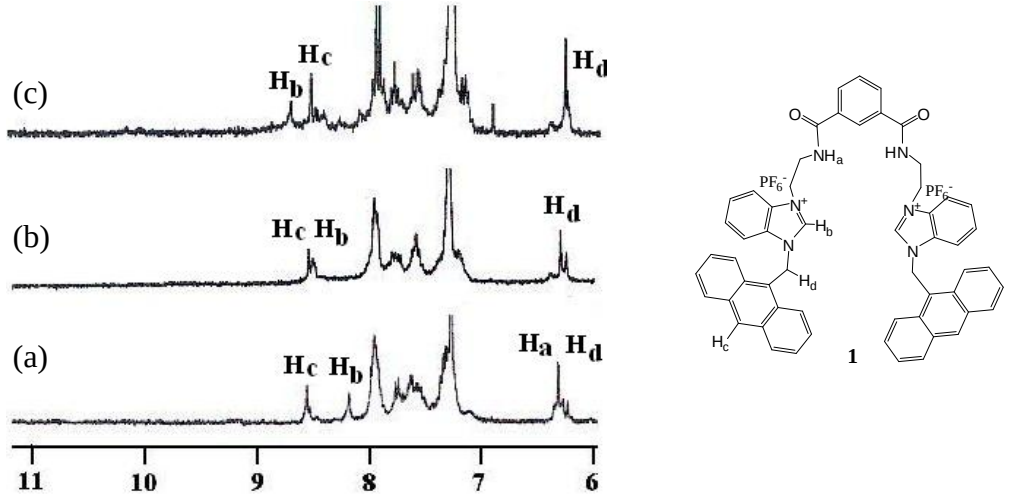


**Figure 11S:** Partial $^1$H NMR (300 MHz, $CDCl_3$ containing 4% $CD_3CN$) spectra of (a) **1** ($c = 1.36 \times 10^{-3}$ M), (b) 1:1 and (c) 2:1 (guest:host) complexes with $F^-$; Note: After 1 equiv addition of $F^-$ the amide protons $H_a$ of **1** were difficult to identify correctly.