Electronic Supplementary Material (ESI) for RSC Advances

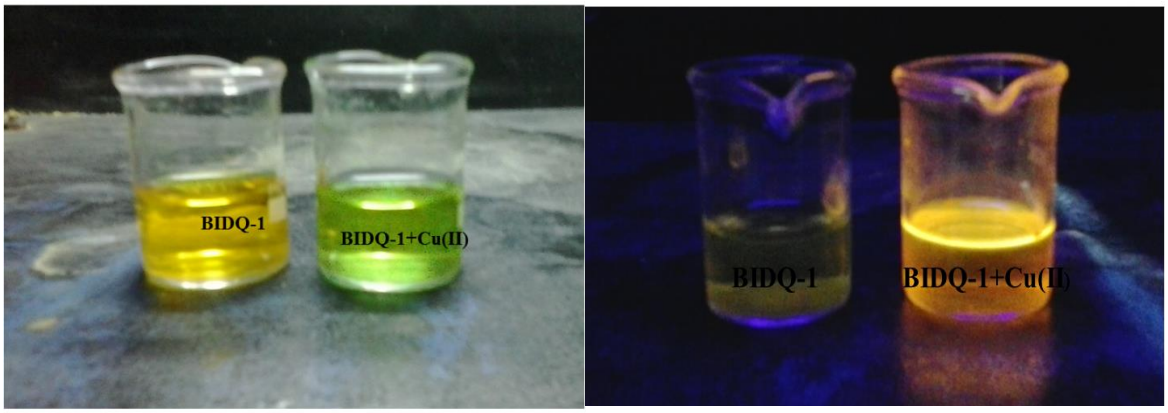
Quick accessible dual mode turn-on red fluorescent chemosensor for Cu(II) and its applicability in live cell imaging.

*Gandhi Sivaraman, Thangaraj Anand, and Duraisamy Chellappa**

School of chemistry, Madurai Kamaraj University,Madurai-625021.

E-mail:dcmku123@gmail.com

Supporting information



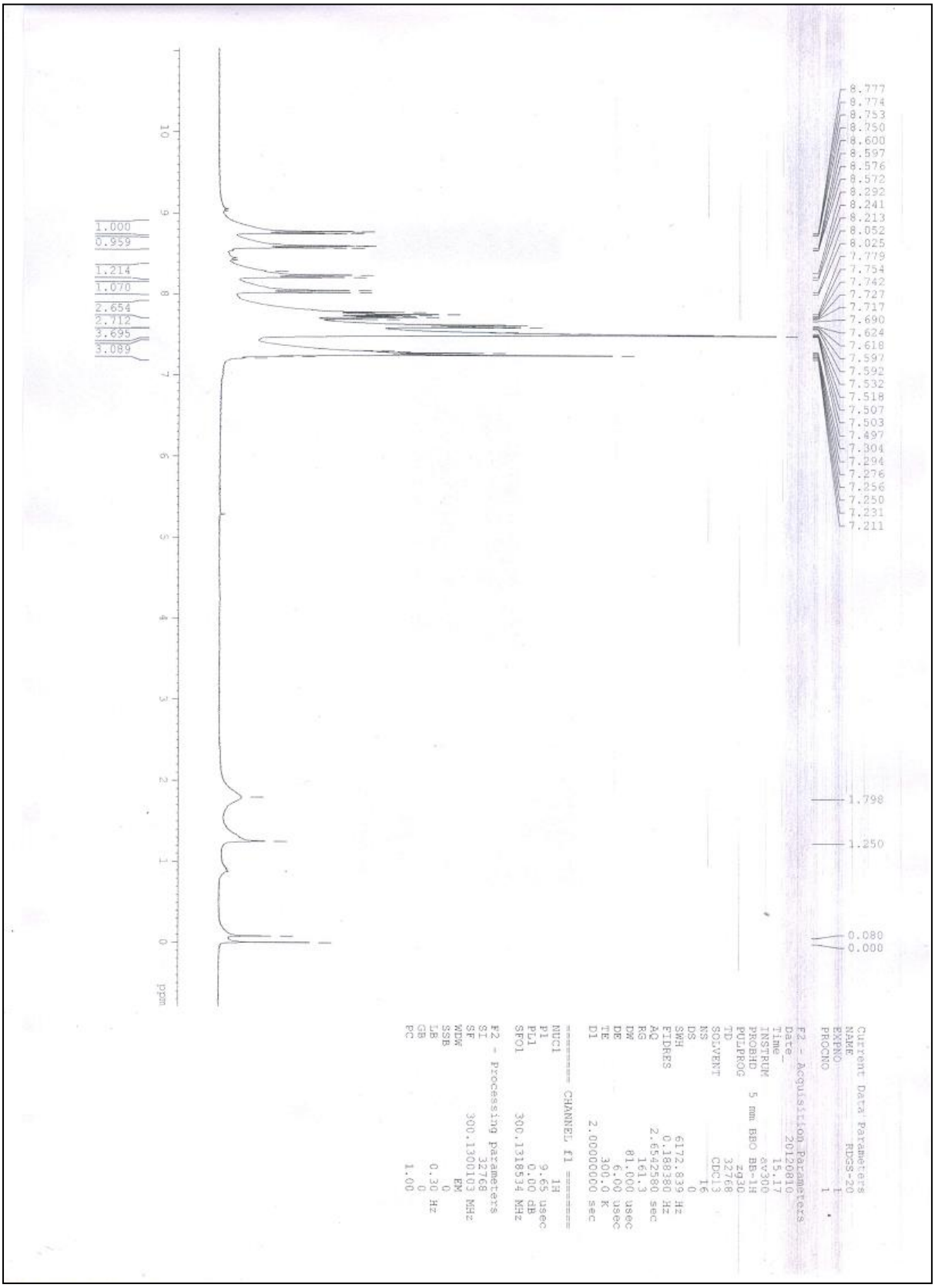


Fig S1: ^{1}H-NMR spectrum of BIDQ-1.

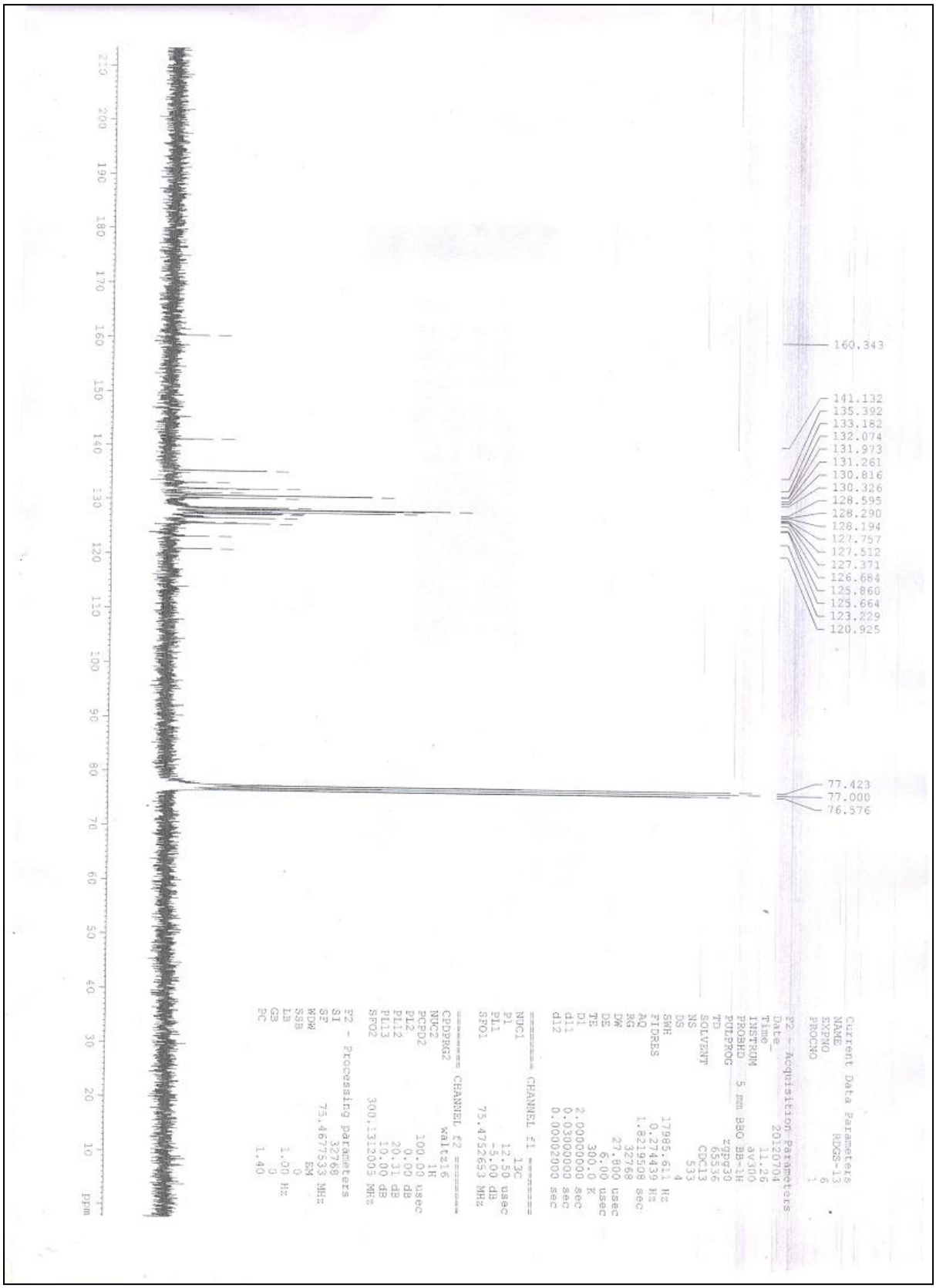


Fig S2: ^{13}C-NMR spectrum of BIDQ-1.

Fig S3: ESI-MS spectrum of BIDQ-1

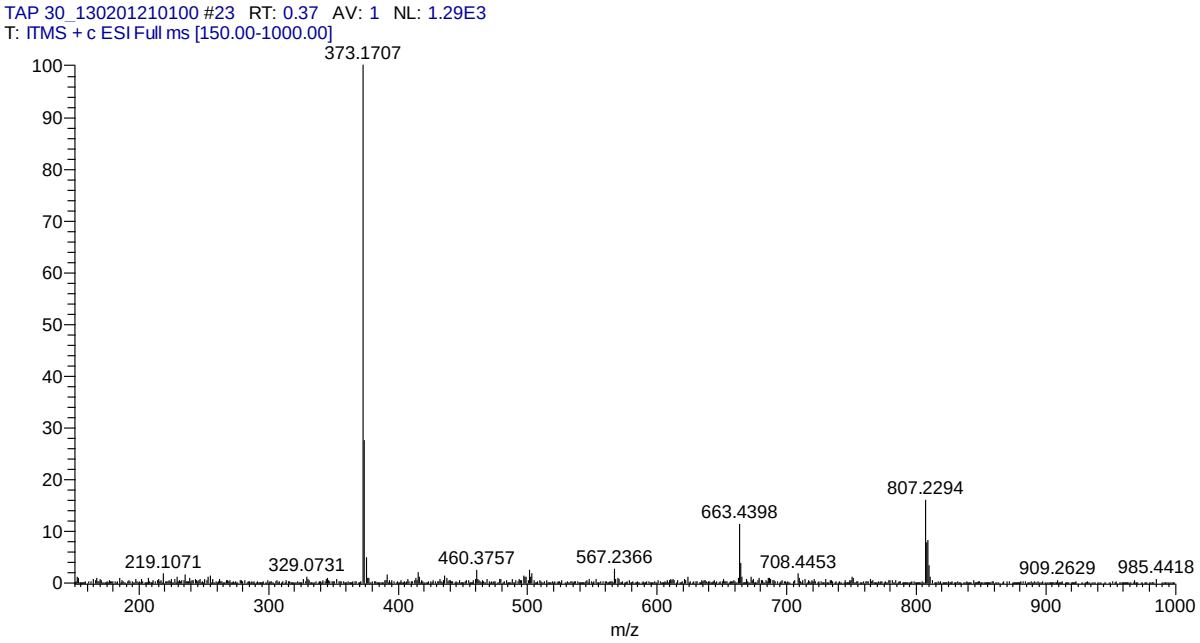


Figure-S4: Job's plot between BIDQ-1and Cu2 +.

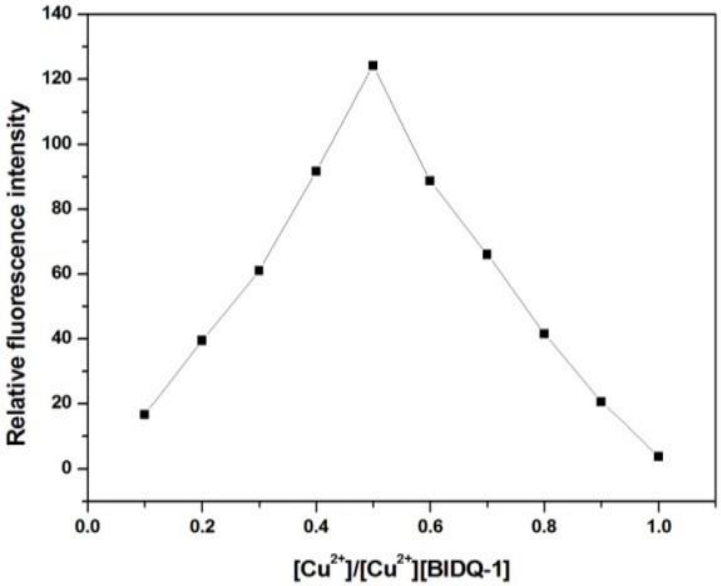


Fig S5: ESI-MS spectrum of BIDQ-1 + Cu^{2+}

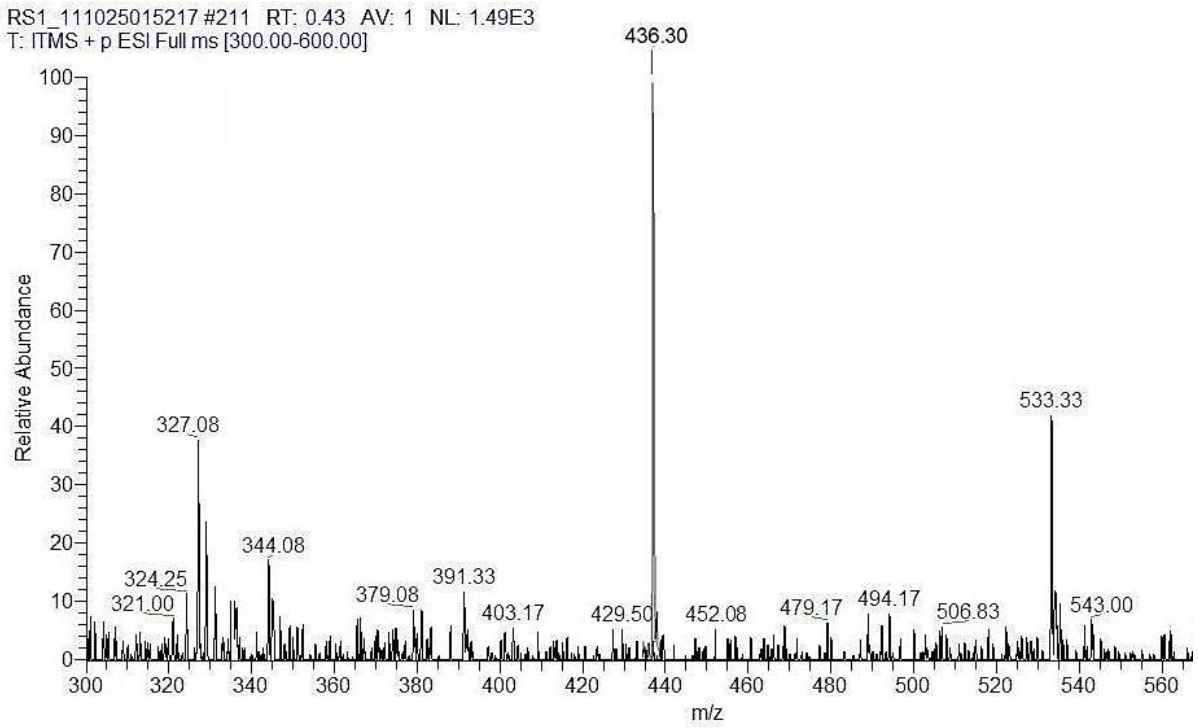


Figure-S6: Frontier molecular orbital diagram of BIDQ-1 and BIDQ-1 + Cu^{2+}

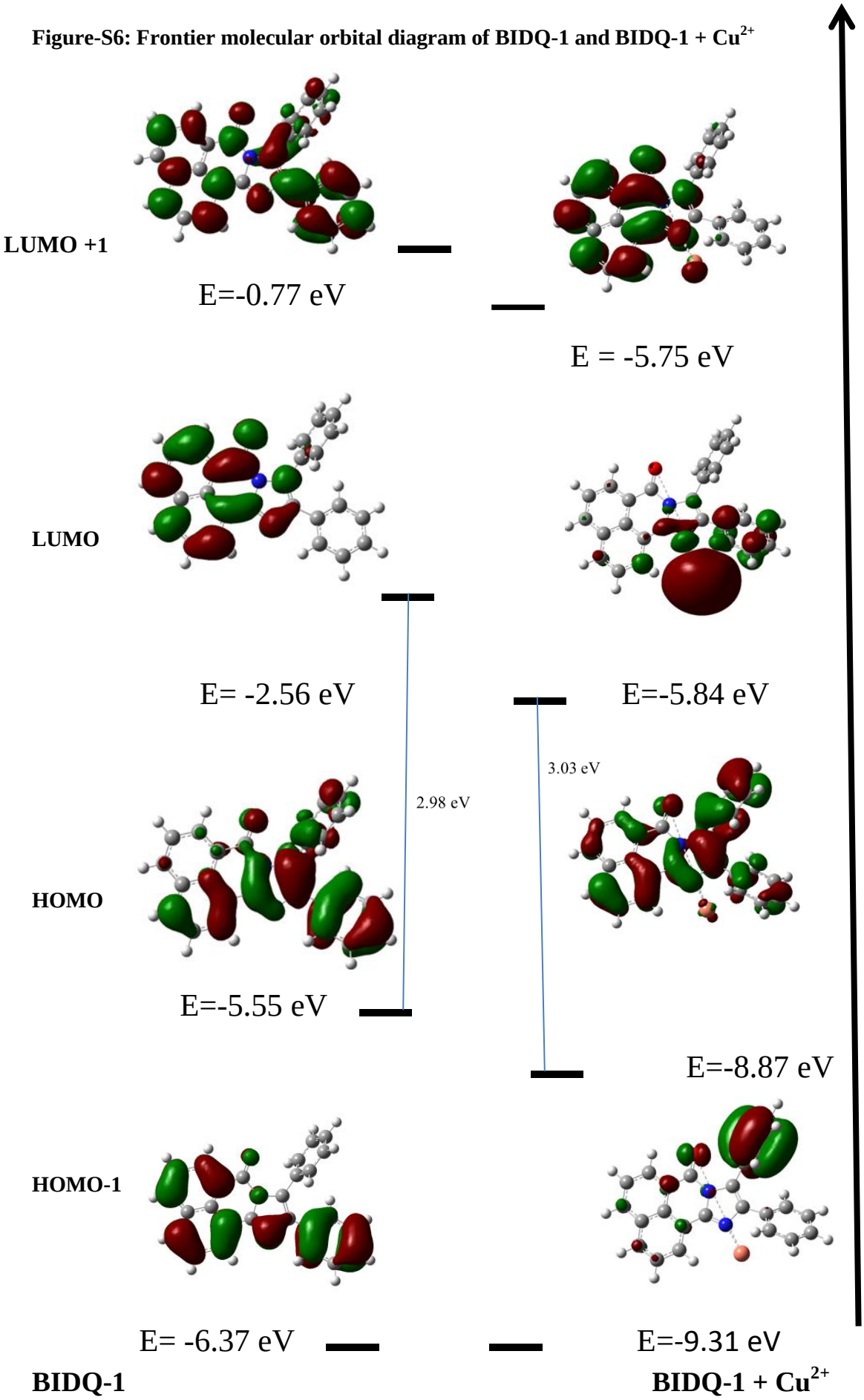


Fig-S7: Plot of fluorescence emission intensity ratio vs concentration of copper ions

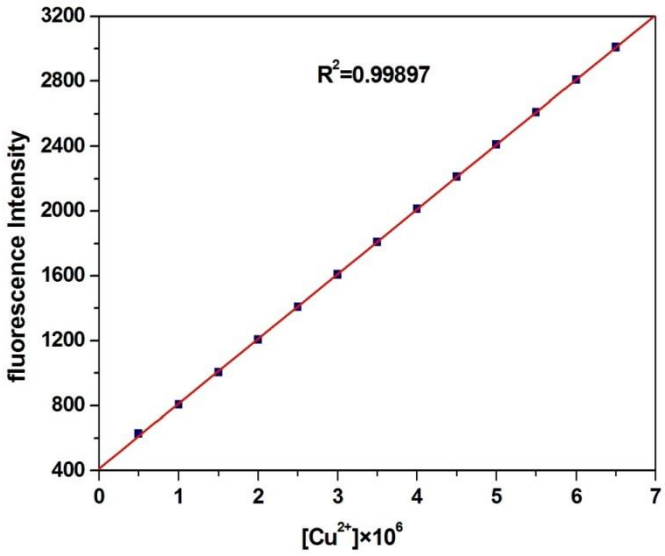


Fig- S8: Fluorescence response of 1 µM BIDQ-1 to various metal ions

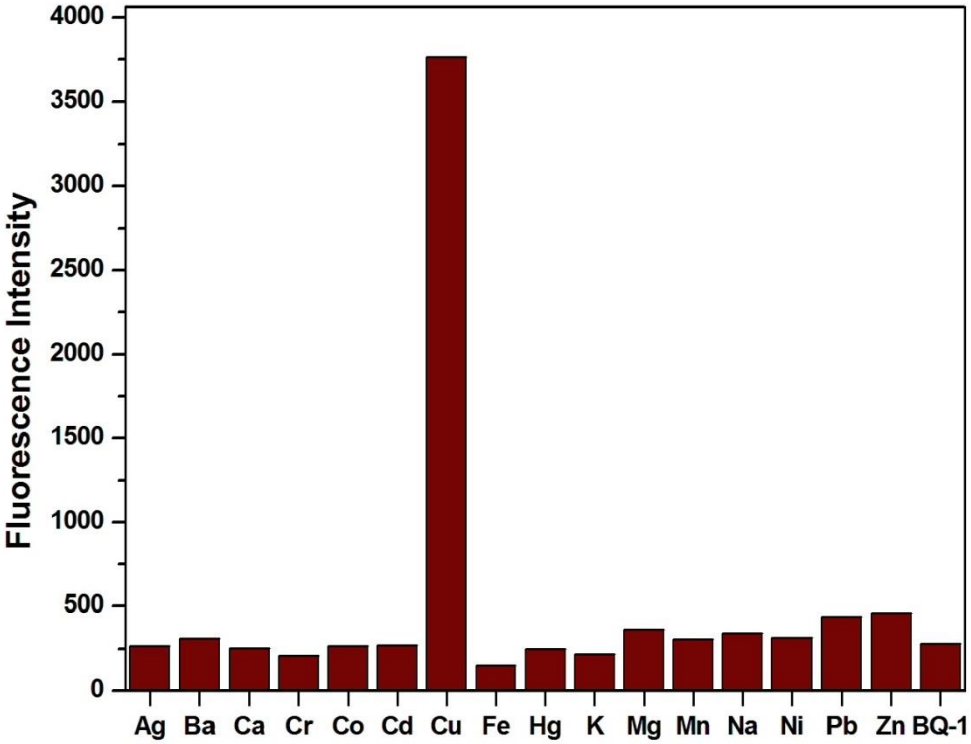


Fig- S9 : Fluorescence response of 1 µM BIDQ-1 to various pH .

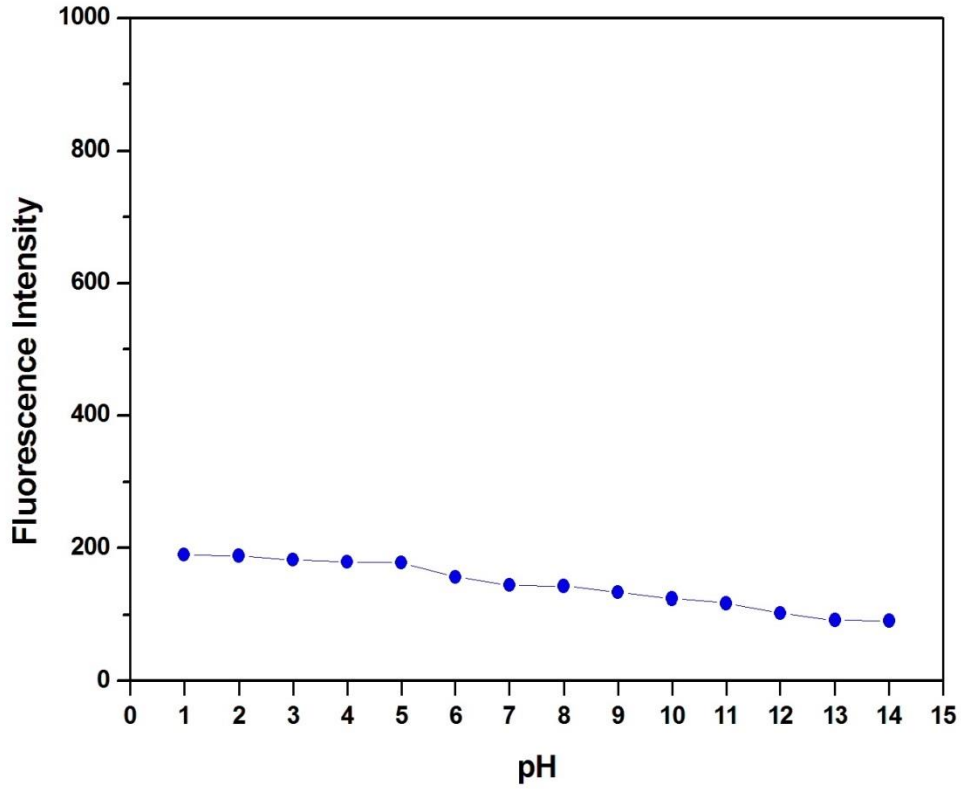
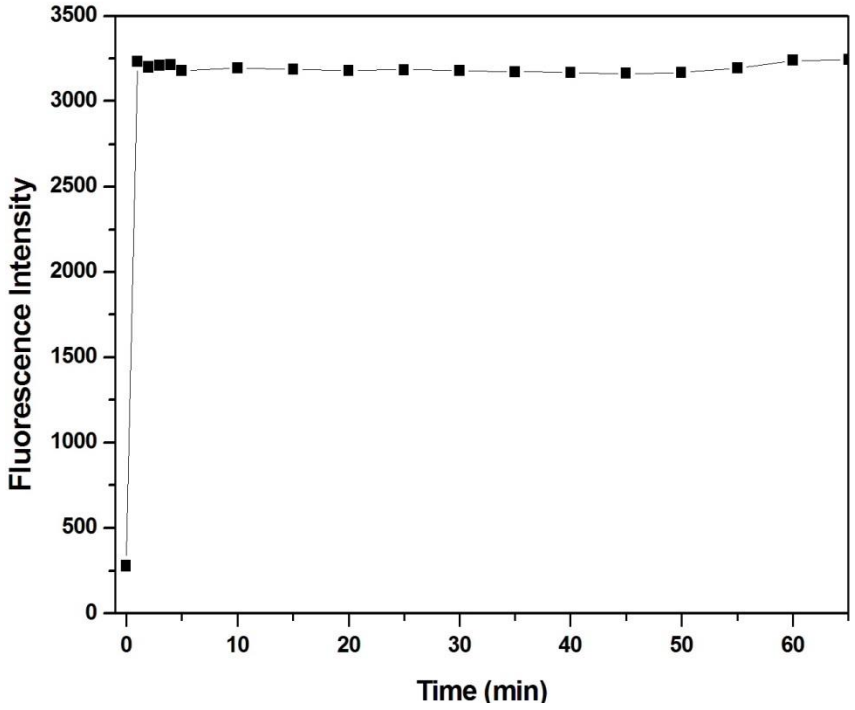


Fig- S 10 : Time dependent Fluorescence response of 1 µM BIDQ-1 to Cu^{2+}.



Calculation of Binding constant:

The binding constant K was determined from the plot of the linear regression of log [(F - F0) / (Fm - F)] vs. log [M] in equation to obtain the intercept as log K and the slope as n.

$$\log \frac{F - F_0}{F_m - F} = \log K + n \log [M]$$

Calculation of Detection limit:

The limit of detection was found using this equation**.**

$DL = C_L \times C_T$

C_L = Conc. of Ligand; C_T = Conc. of Titrant at which change observed.

Thus; $DL = 5 \times 10^{-7} \times 0.042 \times 10^{-6} = 0.0021 \times 10^{-6} = 2.1 \times 10^{-9}$