

Pyrene Appended Bipyridine Hydrazone Ligand as a Turn-ON Sensor for Cu²⁺ and Its Bioimaging Application

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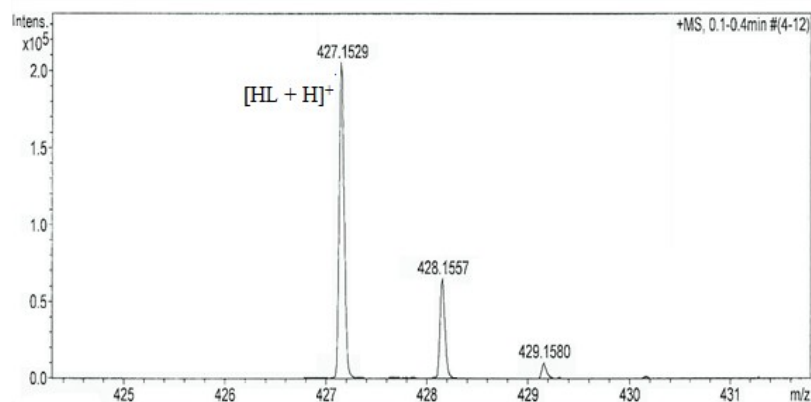


Fig. S1 ESI-MS of ligand HL in MeOH.

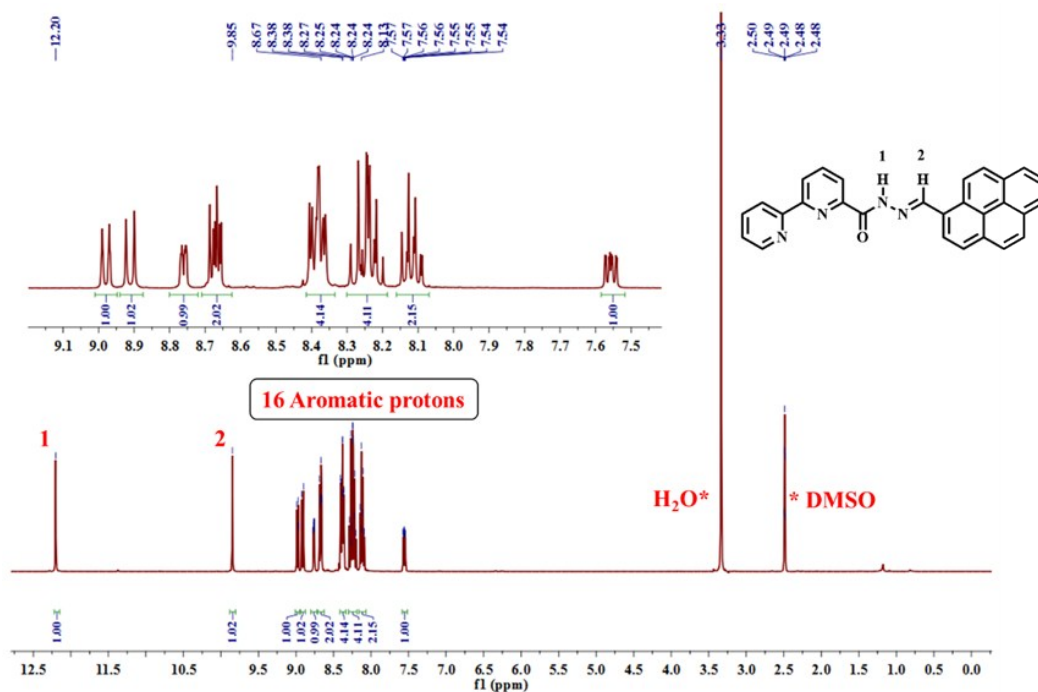


Fig. S2 ¹H NMR spectra of HL in DMSO-d₆.

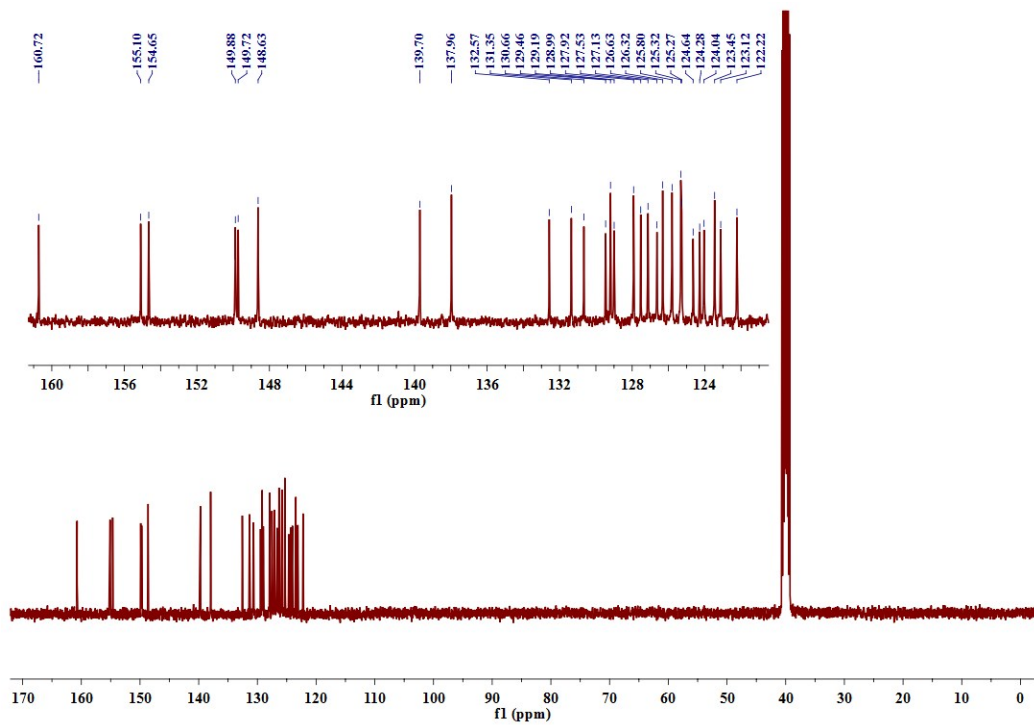


Fig. S3 ^{13}C NMR spectra of **HL** in DMSO-d_6 .

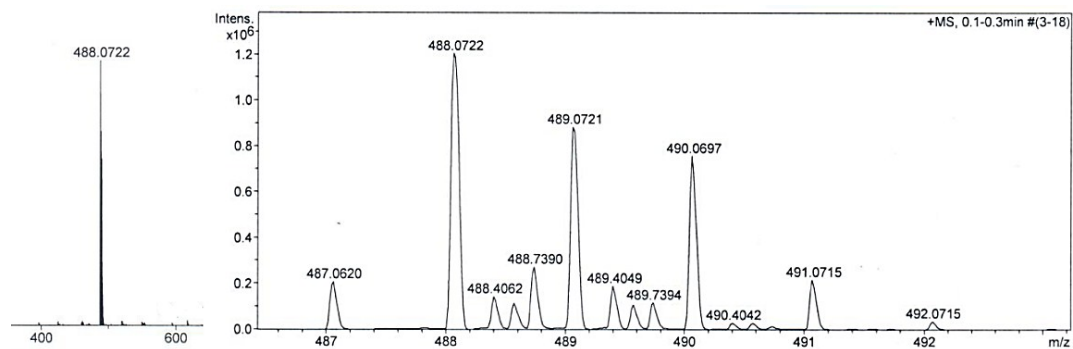


Fig. S4 ESI-MS of L-Cu^{2+} complex in MeOH .

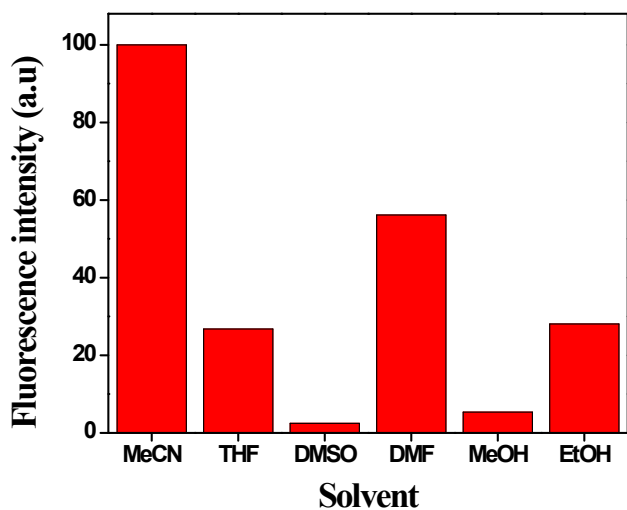


Fig. S5 Bar graph for relative fluorescence intensity of **L-Cu²⁺** in different solvent ($\lambda_{\text{ex}} = 365 \text{ nm}$, $\lambda_{\text{em}} = 466 \text{ nm}$).

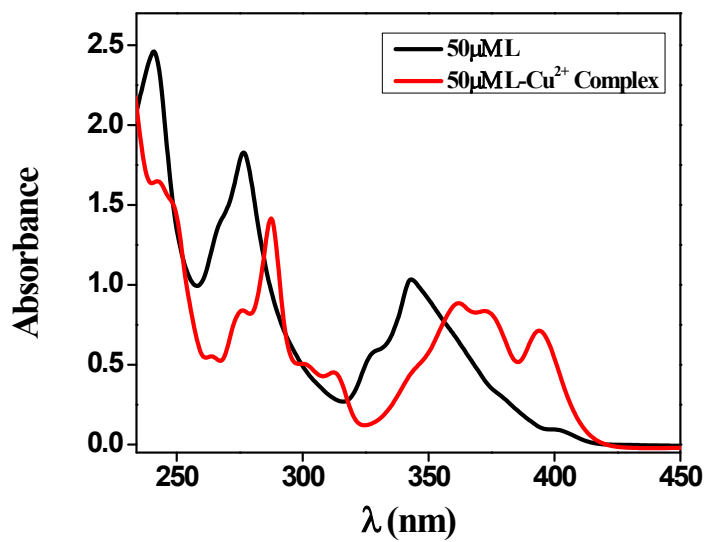


Fig. S6 Absorption spectra of **HL** and **L-Cu²⁺** complex of 50 μM solutions in acetonitrile.

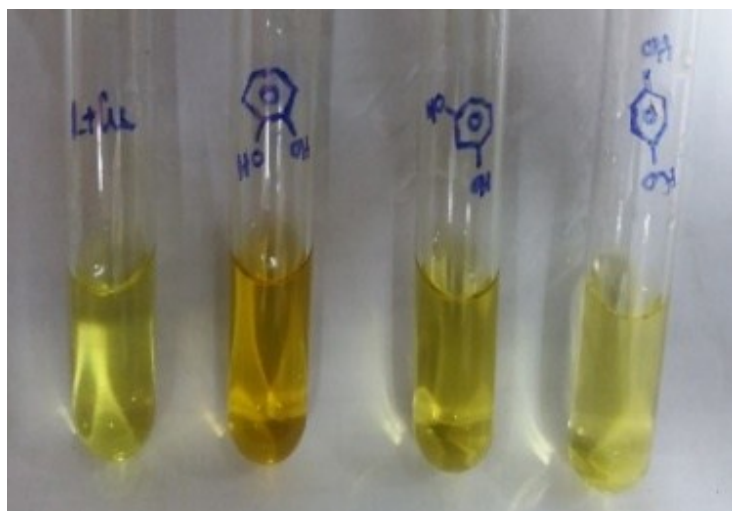


Fig. S7 Spot test of the colorimetric response of Cu-MOM in presence of three positional isomers of benzenediol.

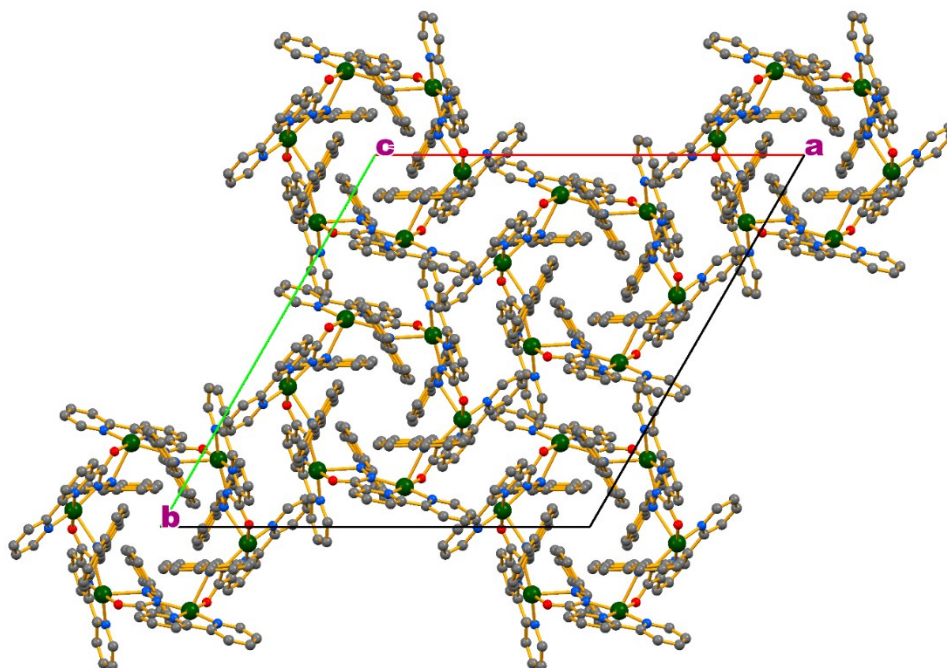


Fig. S8 3D ball and stick single crystal packing representation of Cu²⁺-L complex, disordered nitrate atoms and hydrogen atoms are omitted for clarity.

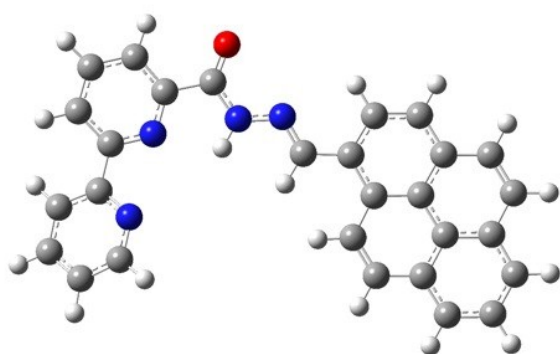
Table S1 Selected bond lengths (in Å) of Cu-complex.

Cu(1)-O(1)#1	1.932(4)
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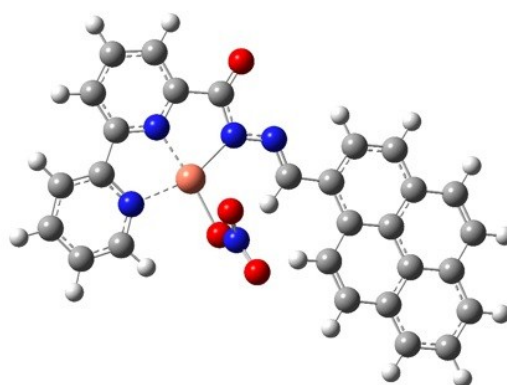
Cu(1)-N(1)	2.042(5)
Cu(1)-N(2)	1.925(4)
Cu(1)-O(2B)	2.810(3)
Cu(1)-N(3)	2.040(5)
Cu(1)-N(4)	2.502(5)

Table S2 Selected bond angles (in °) of Cu-complex.

N(2)-Cu(1)-O(1)#1	176.23(19)
N(2)-Cu(1)-N(3)	79.75(18)
O(1)#1-Cu(1)-N(3)	102.16(16)
N(2)-Cu(1)-N(1)	79.2(2)
O(1)#1-Cu(1)-N(1)	98.9(2)
N(3)-Cu(1)-N(1)	159.0(2)
N(2)-Cu(1)-O(2A)	90.3(3)
O(1)#1-Cu(1)-O(2A)	93.0(3)
N(3)-Cu(1)-O(2A)	87.1(5)
N(1)-Cu(1)-O(2A)	92.0(5)
N(2)-Cu(1)-O(2B)	104.6(6)
O(1)#1-Cu(1)-O(2B)	78.4(6)
N(3)-Cu(1)-O(2B)	100.0(8)
N(1)-Cu(1)-O(2B)	84.4(6)



HL



Cu-L Complex

Fig. S9 DFT optimized structures of the **HL** and Cu^{2+} -**L** complex.