

Highly Selective and Sensitive Fluorescent "TURN-ON" Furan-based Schiff Base for Zinc(II) Ion Probing: Chemical Synthesis, DFT Studies, and X-ray Crystal Structure

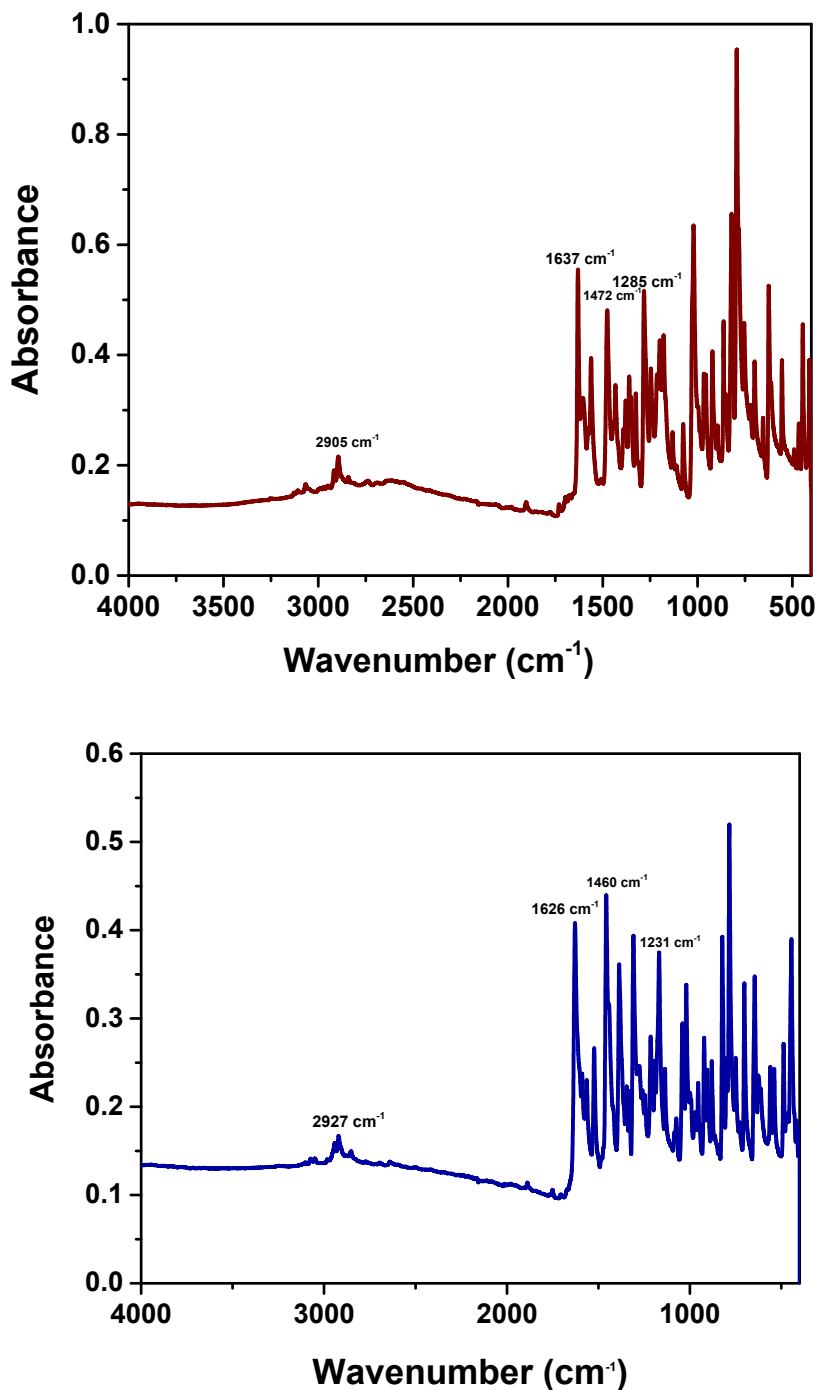


Figure S1: ATR-IR spectrum of BFMP (top) and BFMP-Zn²⁺ complex (bottom).

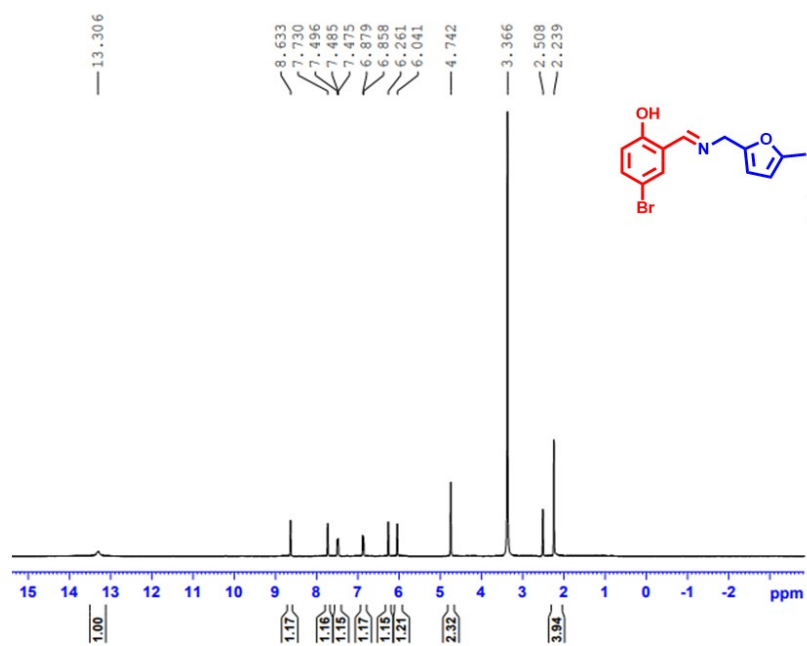


Figure S2: ¹H NMR spectrum of BFMP.

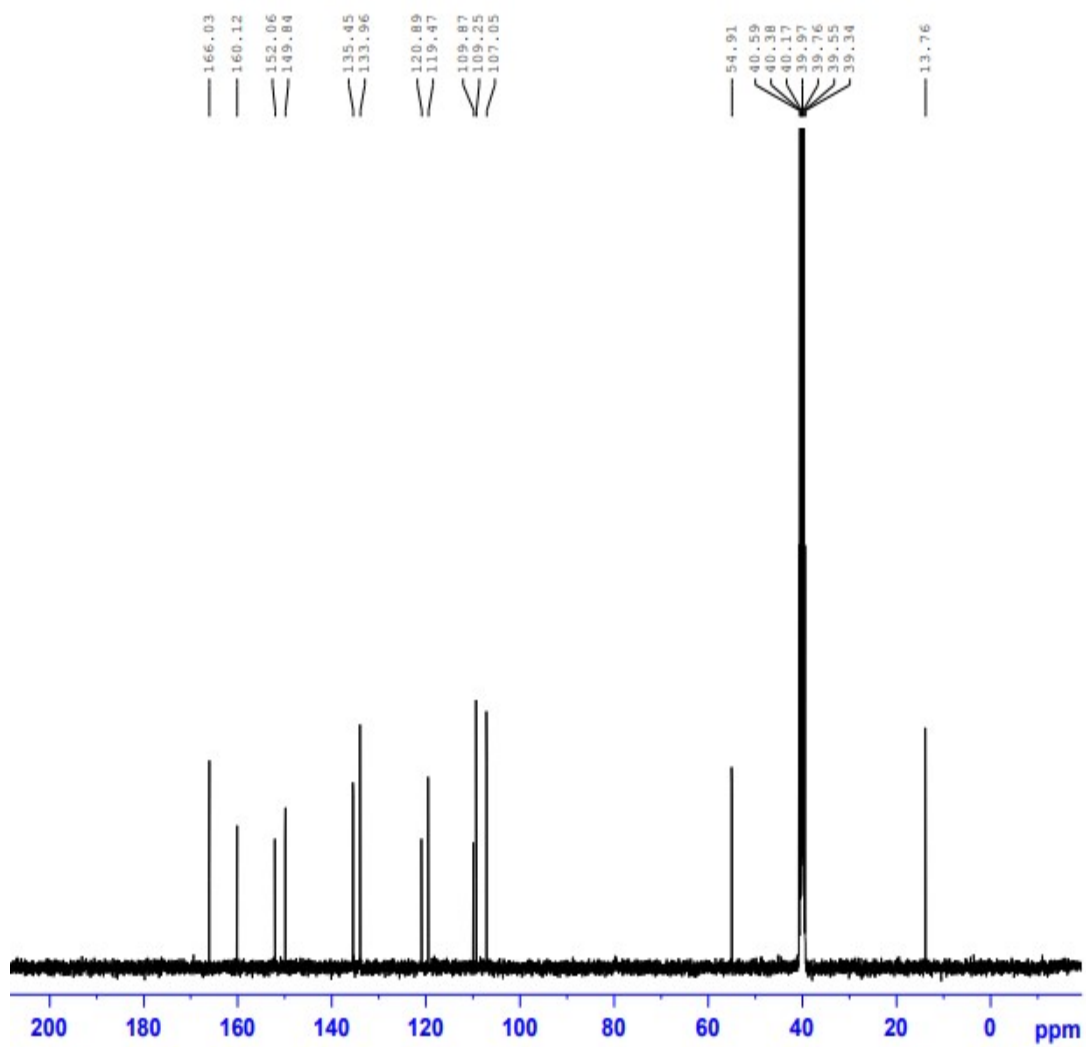


Figure S3: ^{13}C NMR spectrum of BFMP.

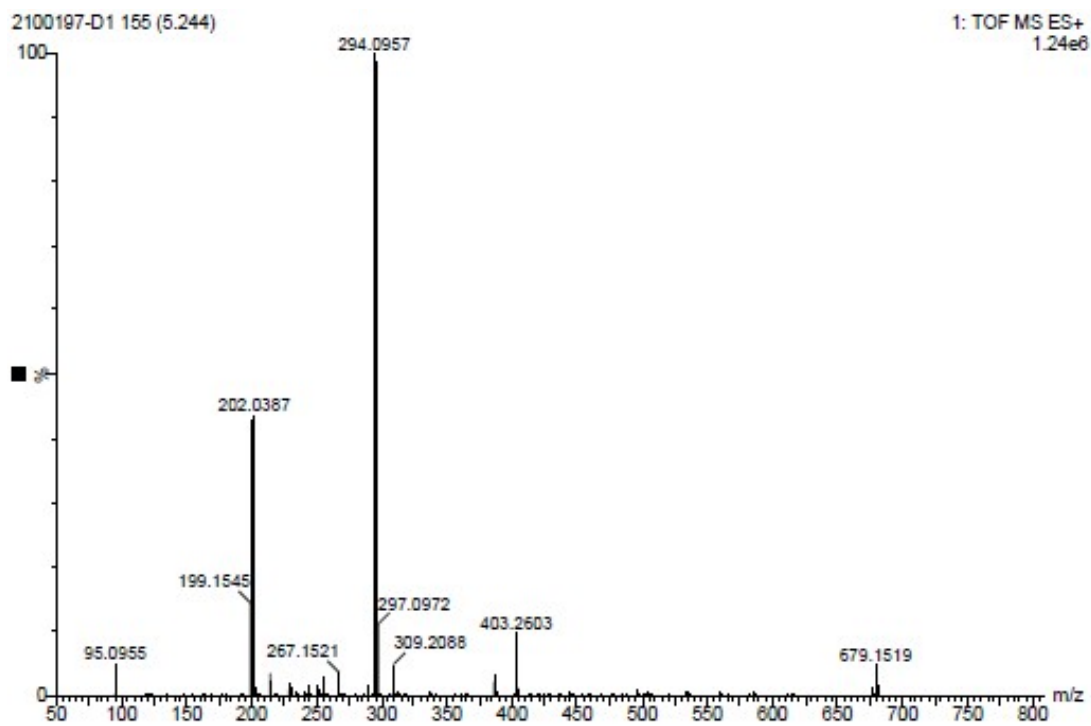


Figure S4: LCMS spectra of BFMP.

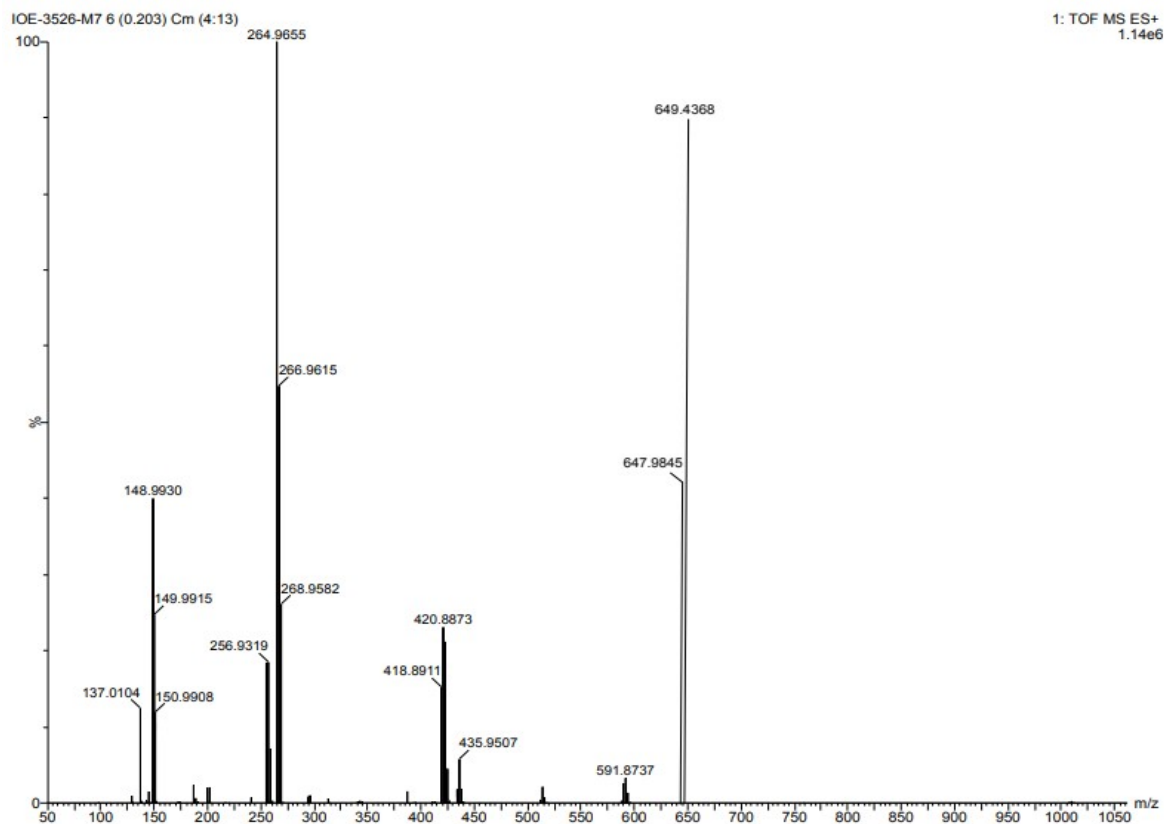
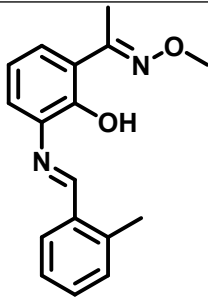
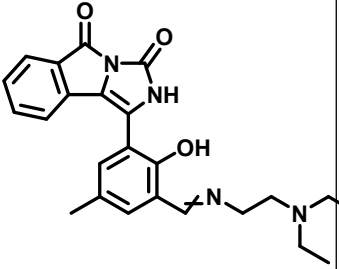
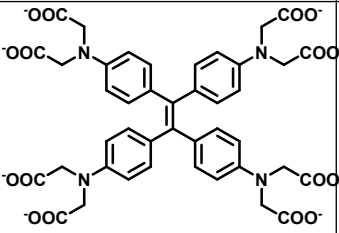
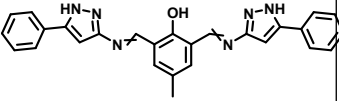


Figure S5: LCMS of zinc complex $[\text{Zn}(\text{BFMP})_2]$.

Table S1: Comparison some recently published fluorescent chemosensors for Zn²⁺ ions.

SI No.	Probe	Excitation/Emission for Zn ²⁺	Mechanism	LOD	Reference
1		358/560	combination of ICT and CHEF	1.44×10^{-7} M	1
2		419/558	Excited State Intramolecular Proton Transfer (ESIPT)	7.30×10^{-8} M	2
3		353/530	CHEF	6.45×10^{-8} M	3
4		315/520	CHEF	27.80×10^{-9} M	4

References:

1. Wen-Kui Dong, Sunday Folaranmi Akogun, Yang Zhang, Yin-Xia Sun, Xiu-Yan Dong, A reversible “turn-on” fluorescent sensor for selective detection of Zn²⁺, *Sensors and Actuators B: Chemical*, 238, 2017, 723-734.
2. Sutapa Sahu, Yeasin Sikdar, Riya Bag, Javier Cerezo, José P. Cerón-Carrasco and Sanchita Goswami, Turn on Fluorescence Sensing of Zn²⁺ Based on Fused Isoindole-Imidazole Scaffold, *Molecules*, 27, 2022, 2859.
3. Fei Sun, Guanxin Zhang, Deqing Zhang, Lin Xue, Hua Jiang, Aqueous Fluorescence Turn-on Sensor for Zn²⁺ with a Tetraphenylethylene Compound, *Organic Letters*, 13, 2011, 6378–6381
4. Somenath Lohar, Siddhartha Pal, Manjira Mukherjee, Abhishek Maji, Nicola Demitri and Pabitra Chattopadhyay, A turn-on green channel Zn²⁺ sensor and the resulting zinc(II) complex as a red channel HPO₄²⁻ ion sensor: a new approach, *RSC Advances*, 7, 2017, 25528-25534.