

Luminescent Triazene Based Covalent Organic Frameworks Functionalized with Imine and Azine: N₂ and H₂ Sorption and Efficient Removal of Organic Dye Pollutants

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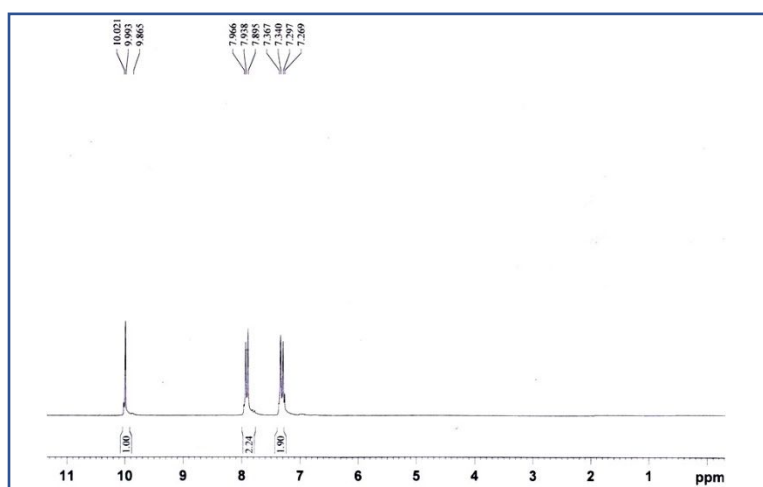


Figure S1: ¹HNMR spectra of the aldehyde TFPT.

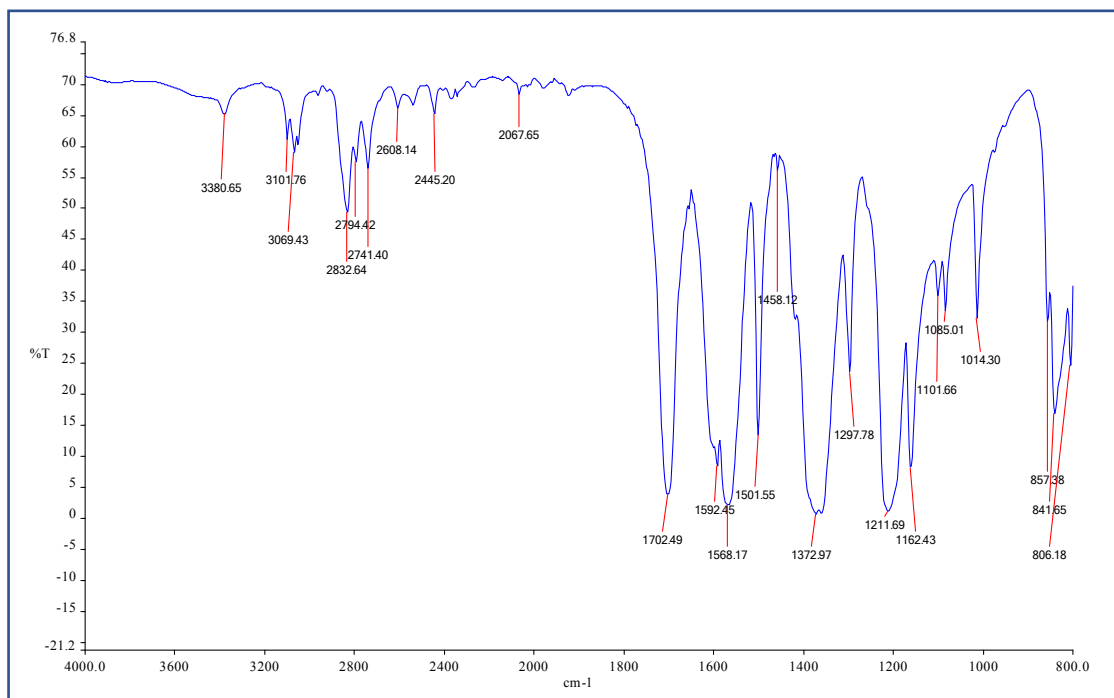


Figure S2: FTIR spectra of TFPT.

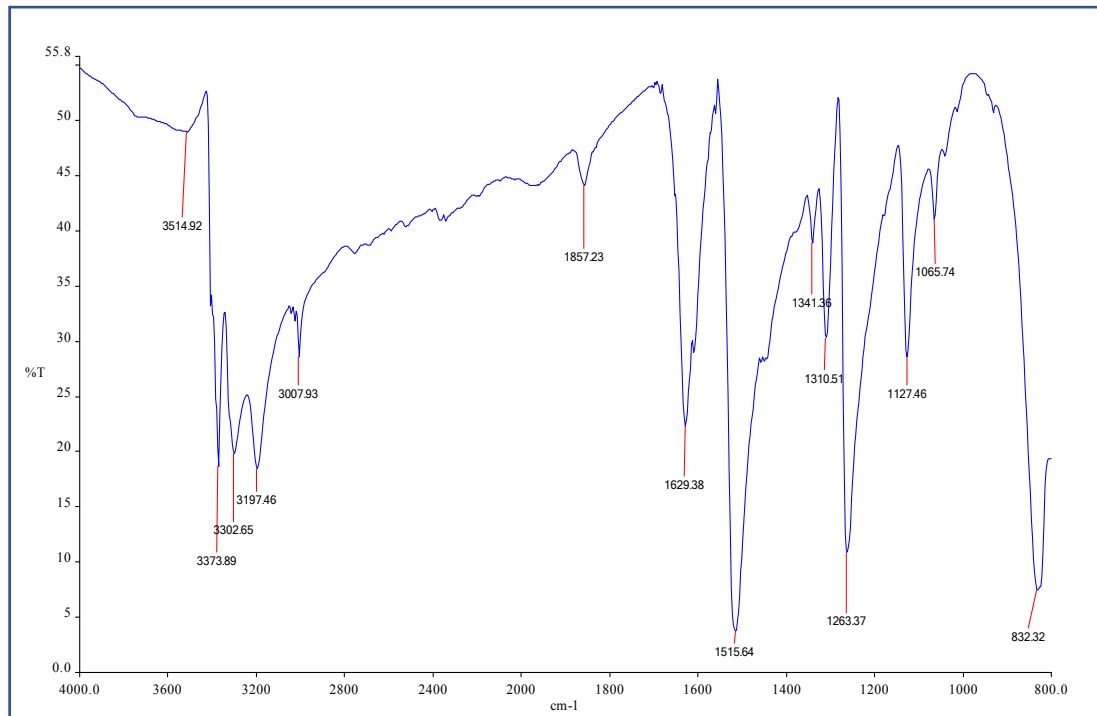


Figure S3: FTIR spectra of p-phenylenediamine.

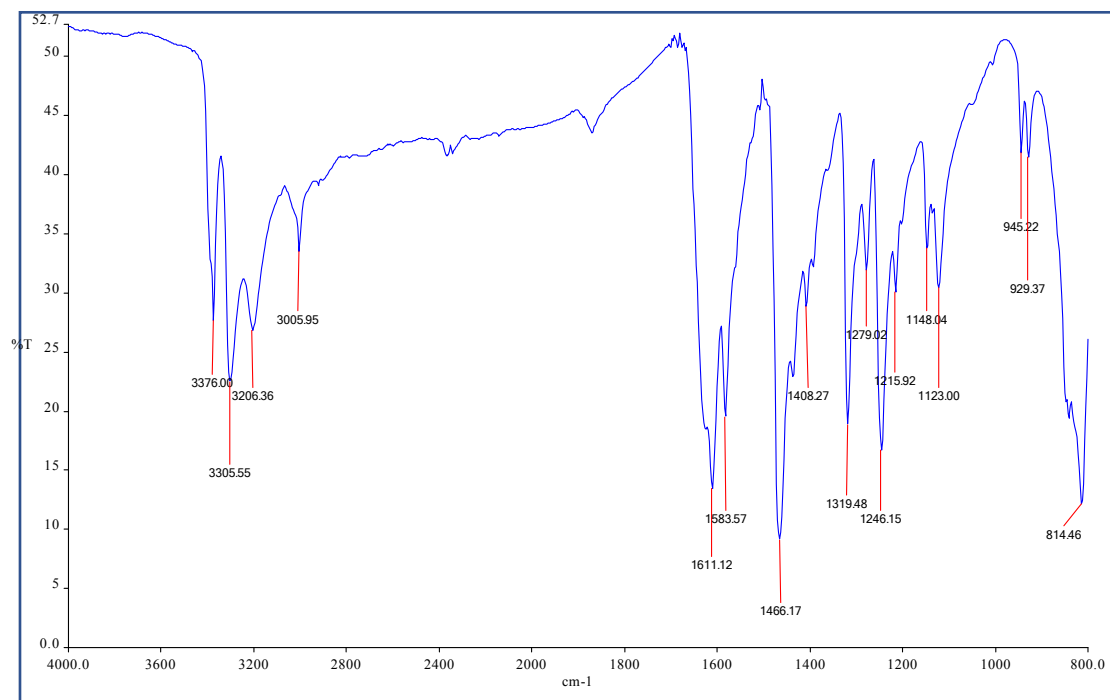


Figure S4: FTIR spectra of 2,7-diaminofluorene.

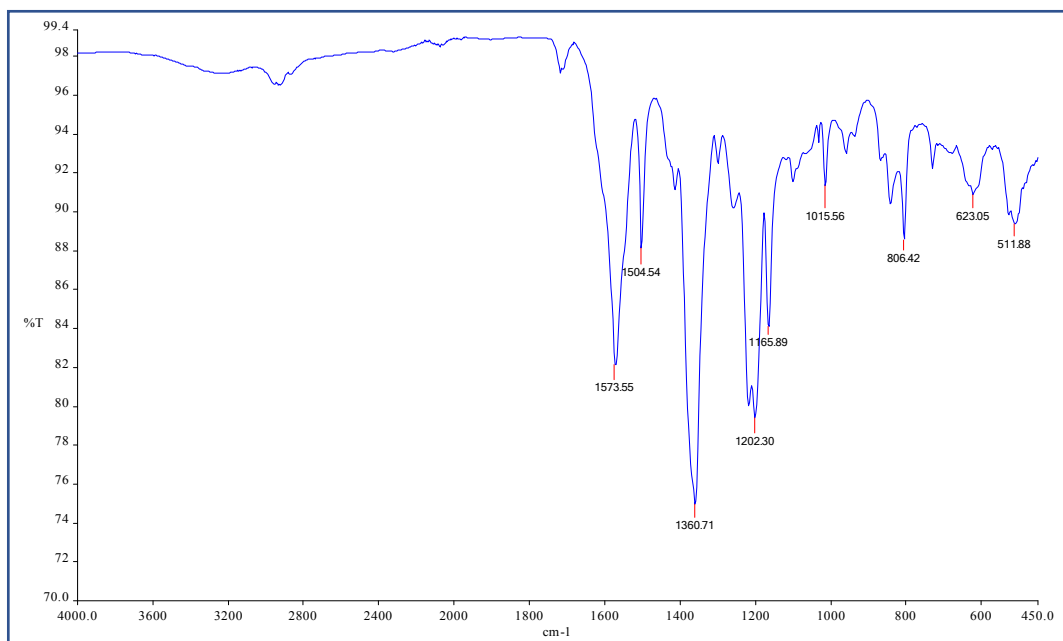


Figure S5: FTIR spectra of COF-1.

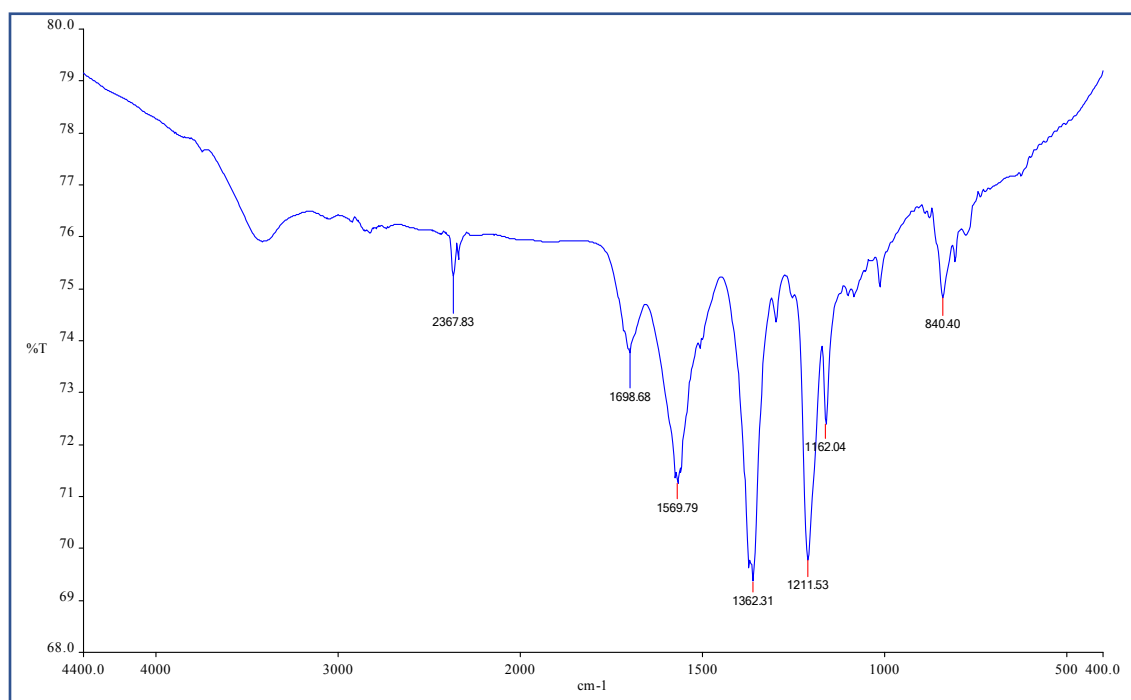


Figure S6: FTIR spectra of COF-2.

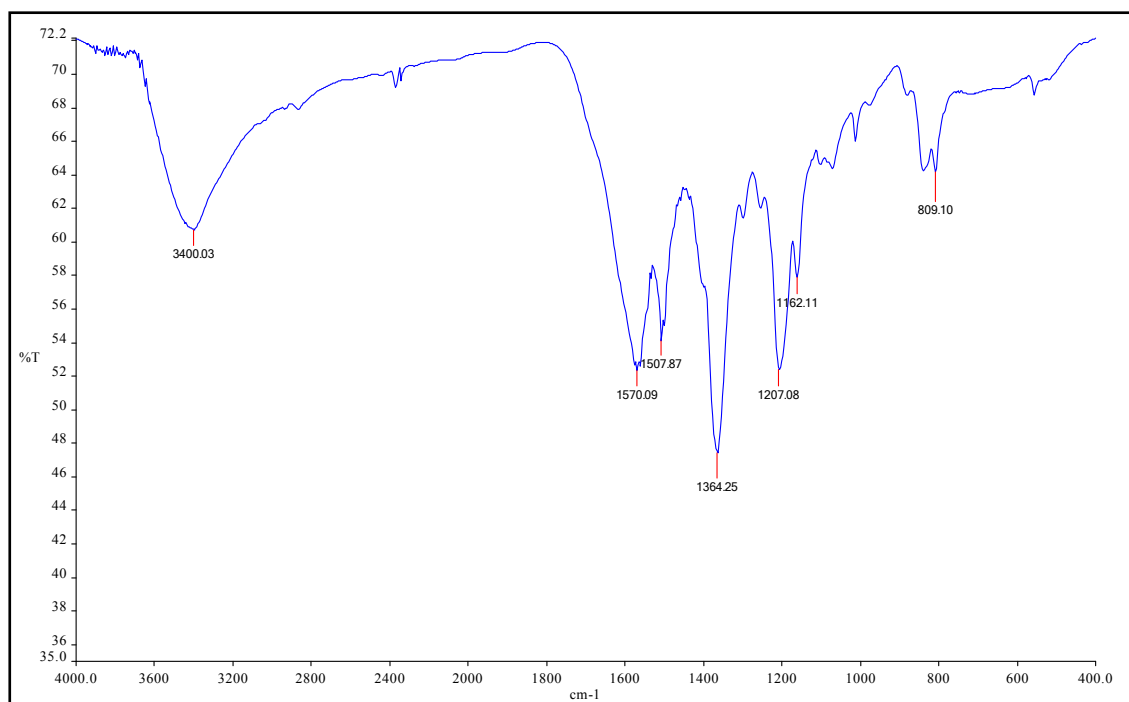


Figure S7: FTIR spectra of COF-3.

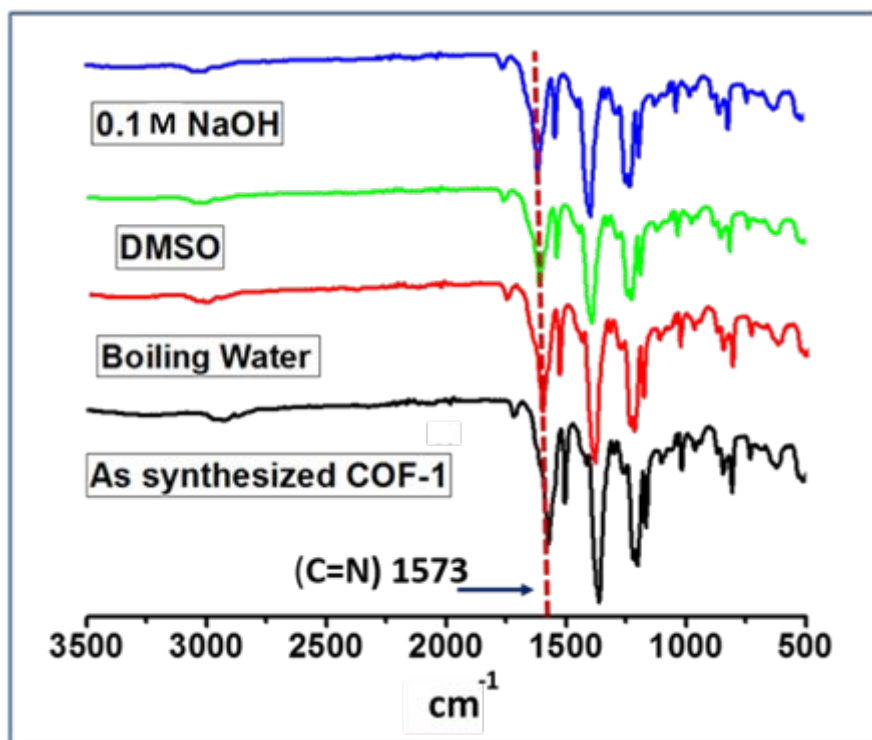


Figure S8: FTIR spectra of COF-1 upon treatment with boiling water, DMSO and 0.1 M NaOH.

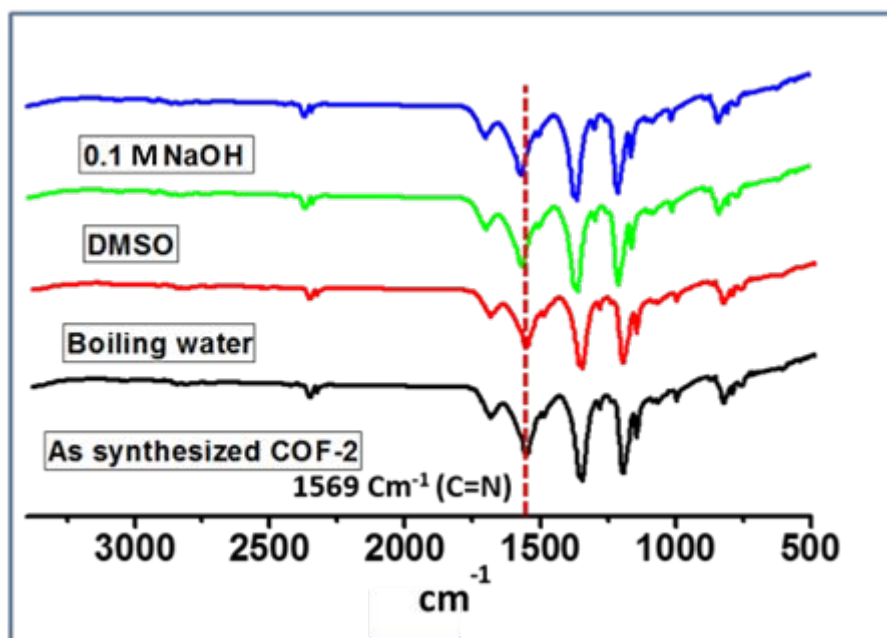


Figure S9: FTIR spectra of COF-2 upon treatment with boiling water, DMSO and 0.1 M NaOH.

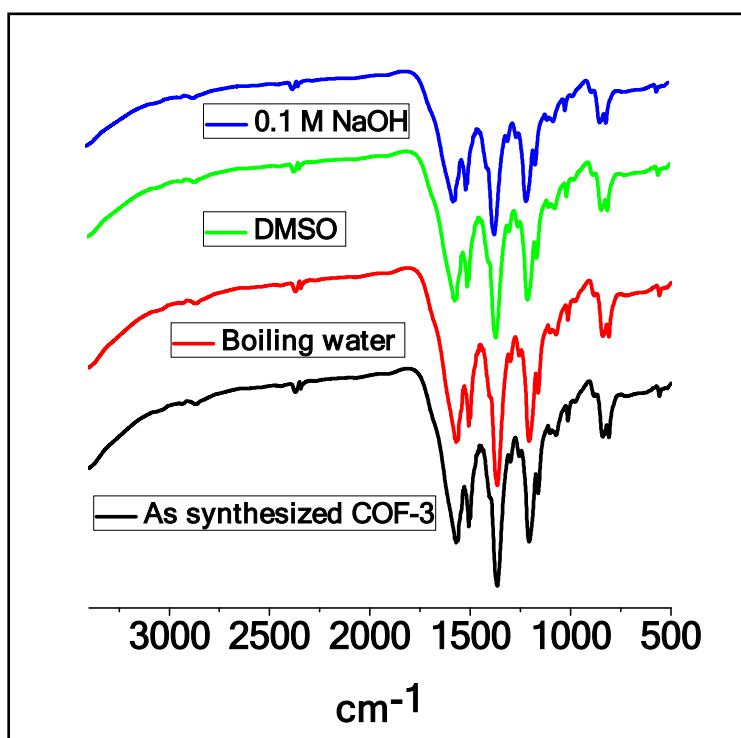


Figure S10: FTIR spectra of COF-3 upon treatment with boiling water, DMSO and 0.1 M NaOH.

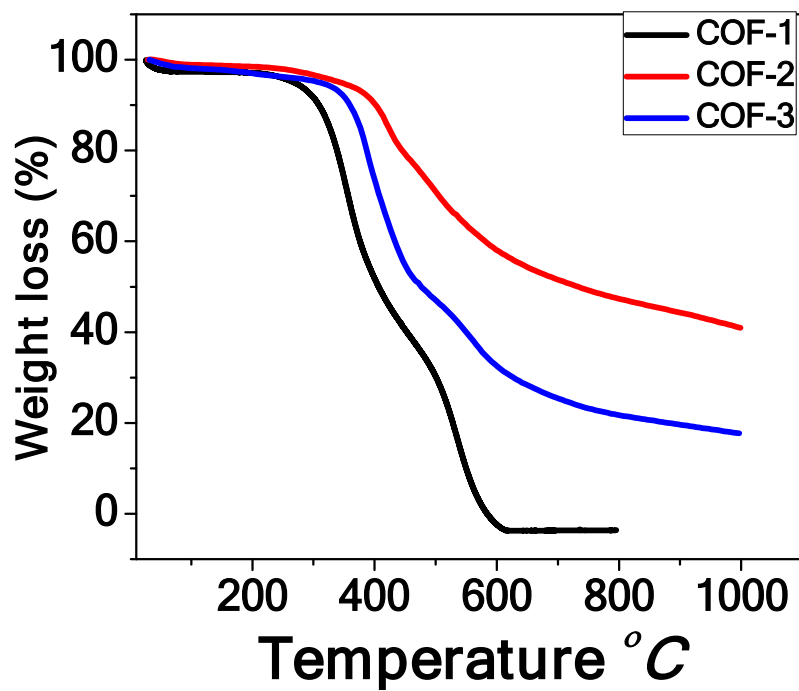


Figure S11: TGA profile of the COF-1, COF-2 and COF-3.

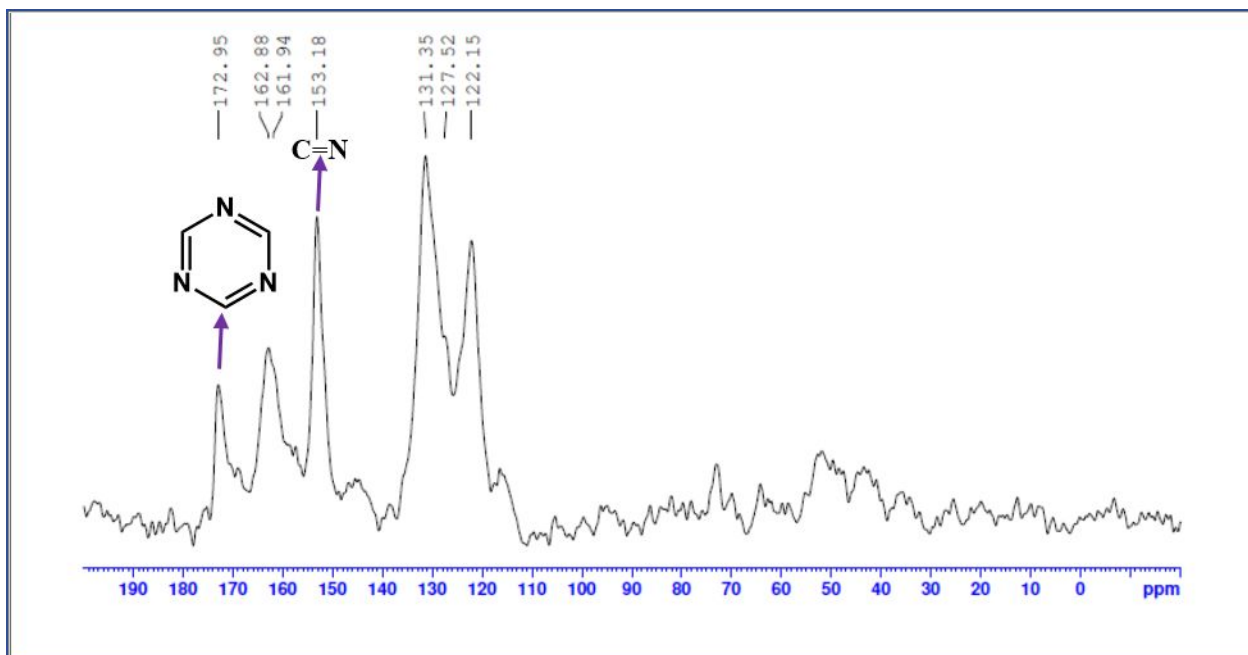


Figure S12: Solid state ^{13}C NMR spectra of COF-1.

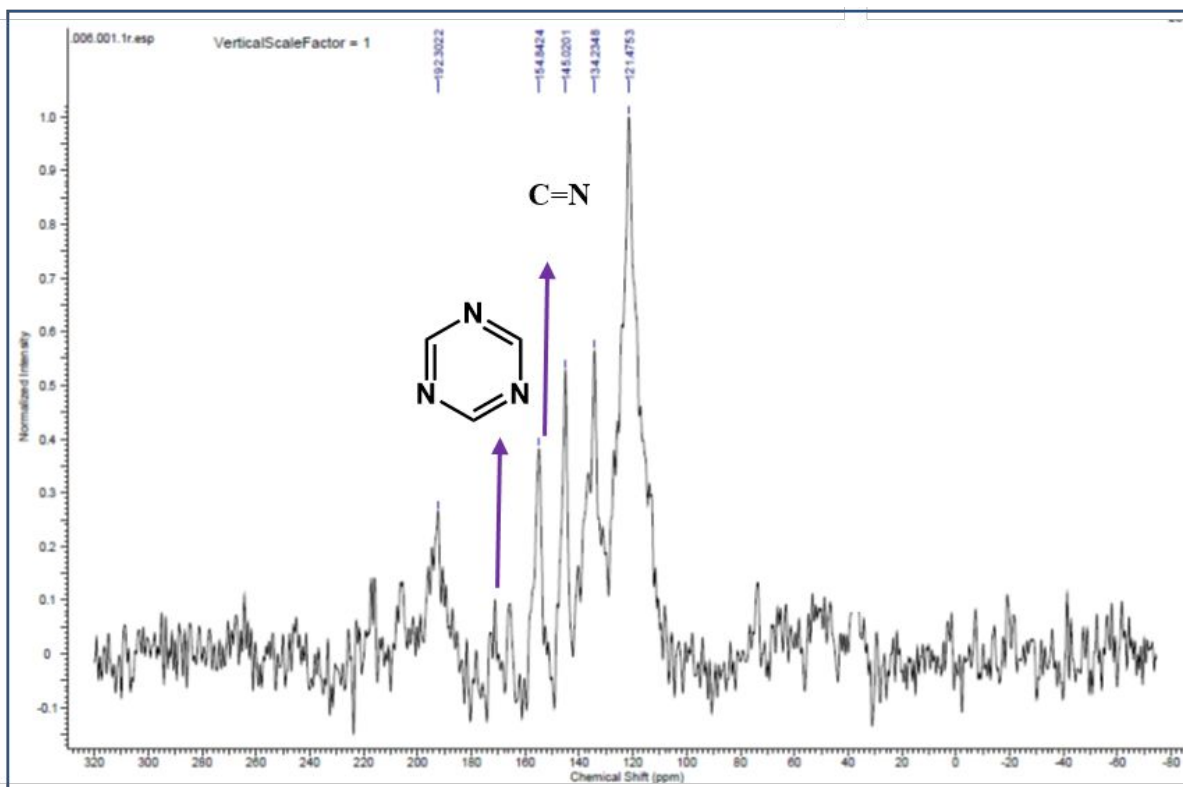


Figure S13: Solid state ^{13}C NMR spectra of COF-2.

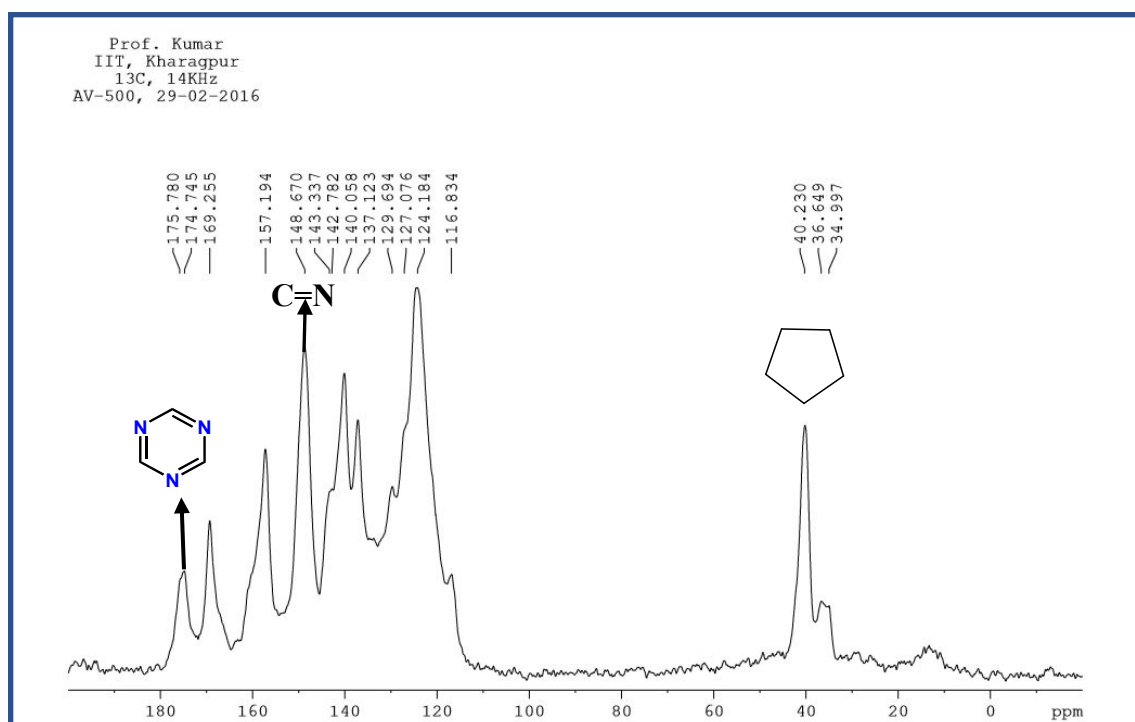


Figure S14: Solid-state ^{13}C NMR spectra for COF-3.

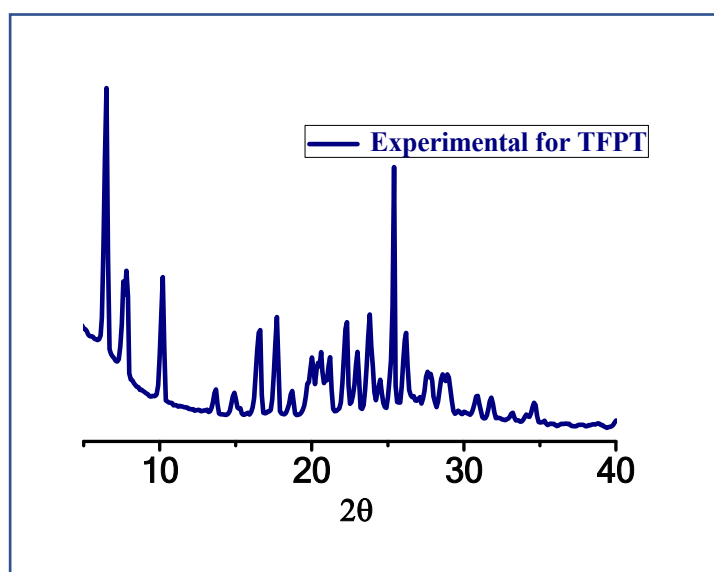


Figure S15: Experimental PXRD pattern for TFPT.

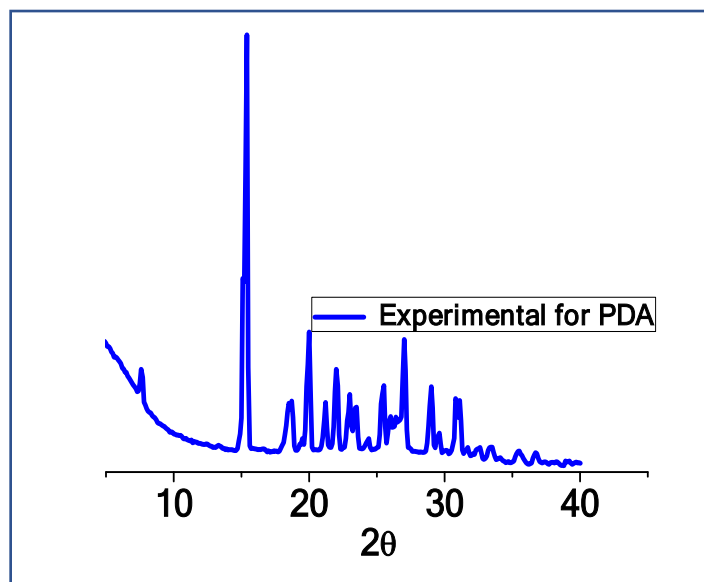


Figure S16: Experimental PXRD pattern of p-phenylenediamine (PDA).

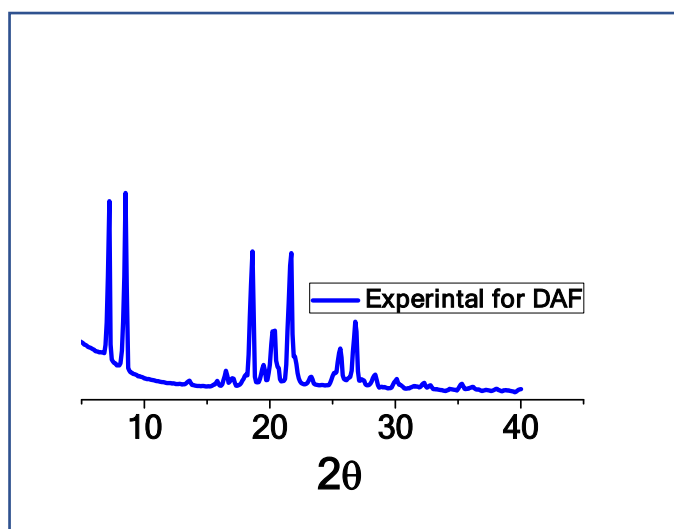


Figure S17: Experimental PXRD pattern for 2,7-diaminofluorene (DAF)

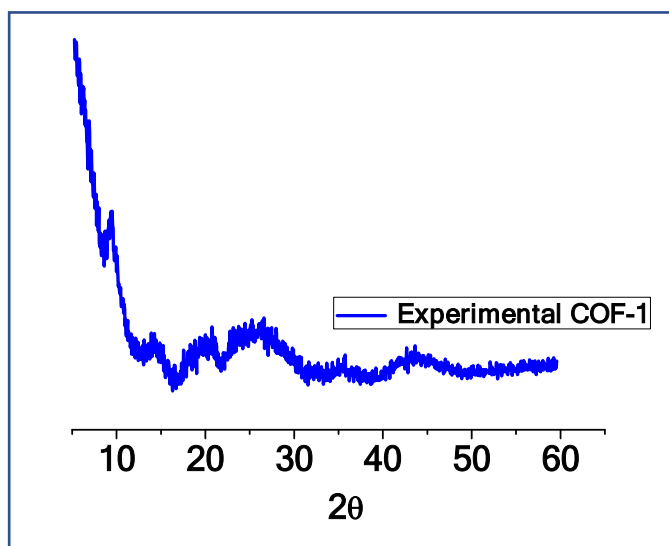


Figure S18: Experimental PXRD pattern for COF-1.

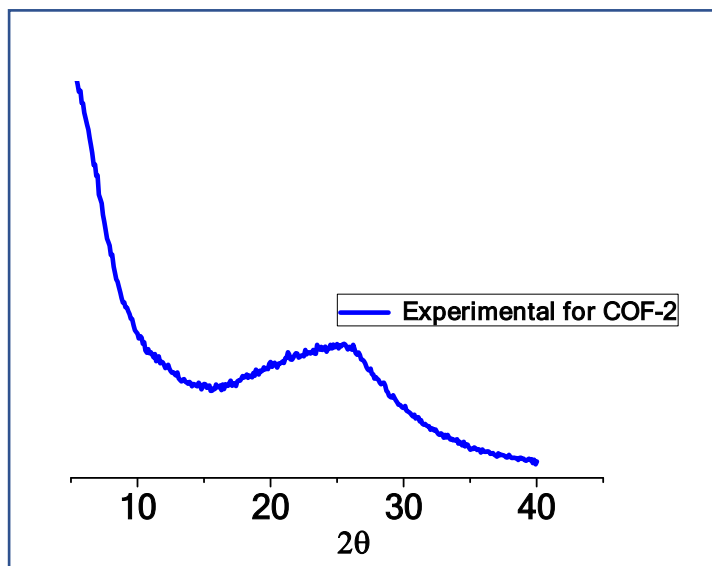


Figure S19: Experimental PXRD pattern for COF-2.

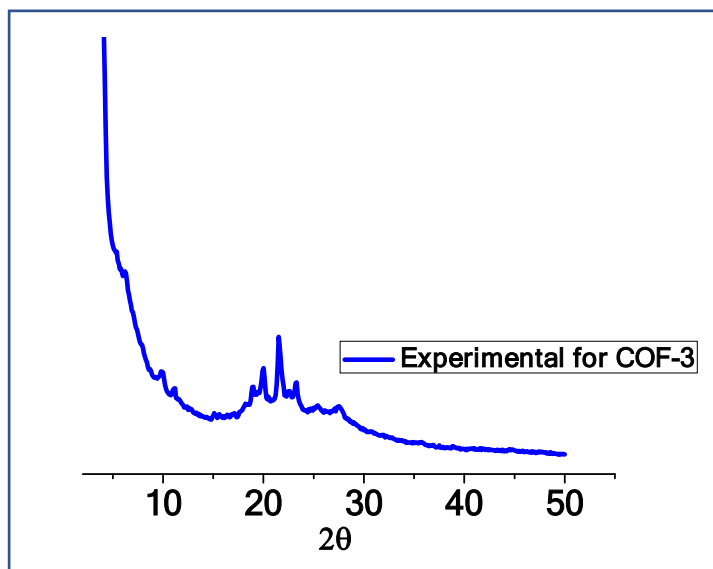


Figure S20: Experimental PXRD pattern for the COF-3.

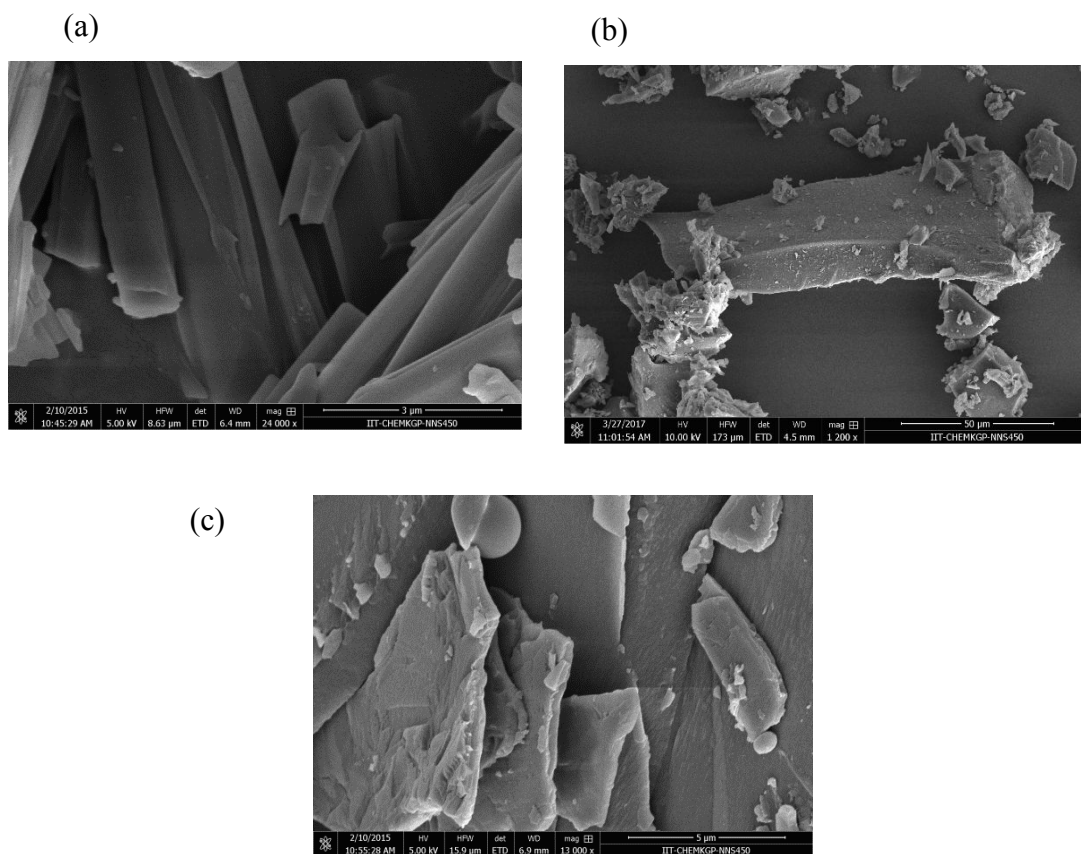


Figure S21: FESEM images for (a) TFPT; (b) PDA; and (c) DAF.

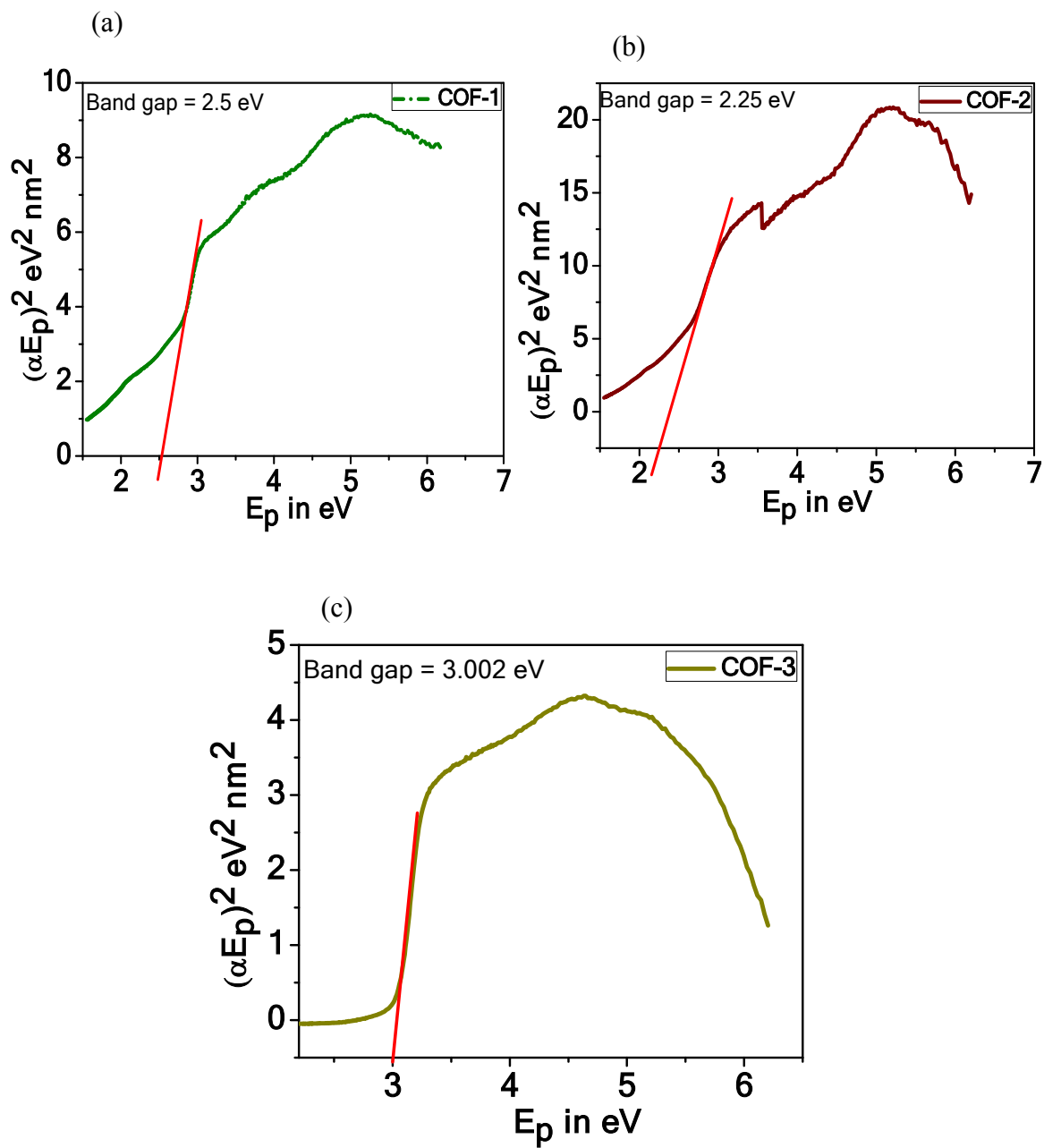


Figure S22: Band gap calculations for (a) COF-1; (b) COF-2; and (c) COF-3.

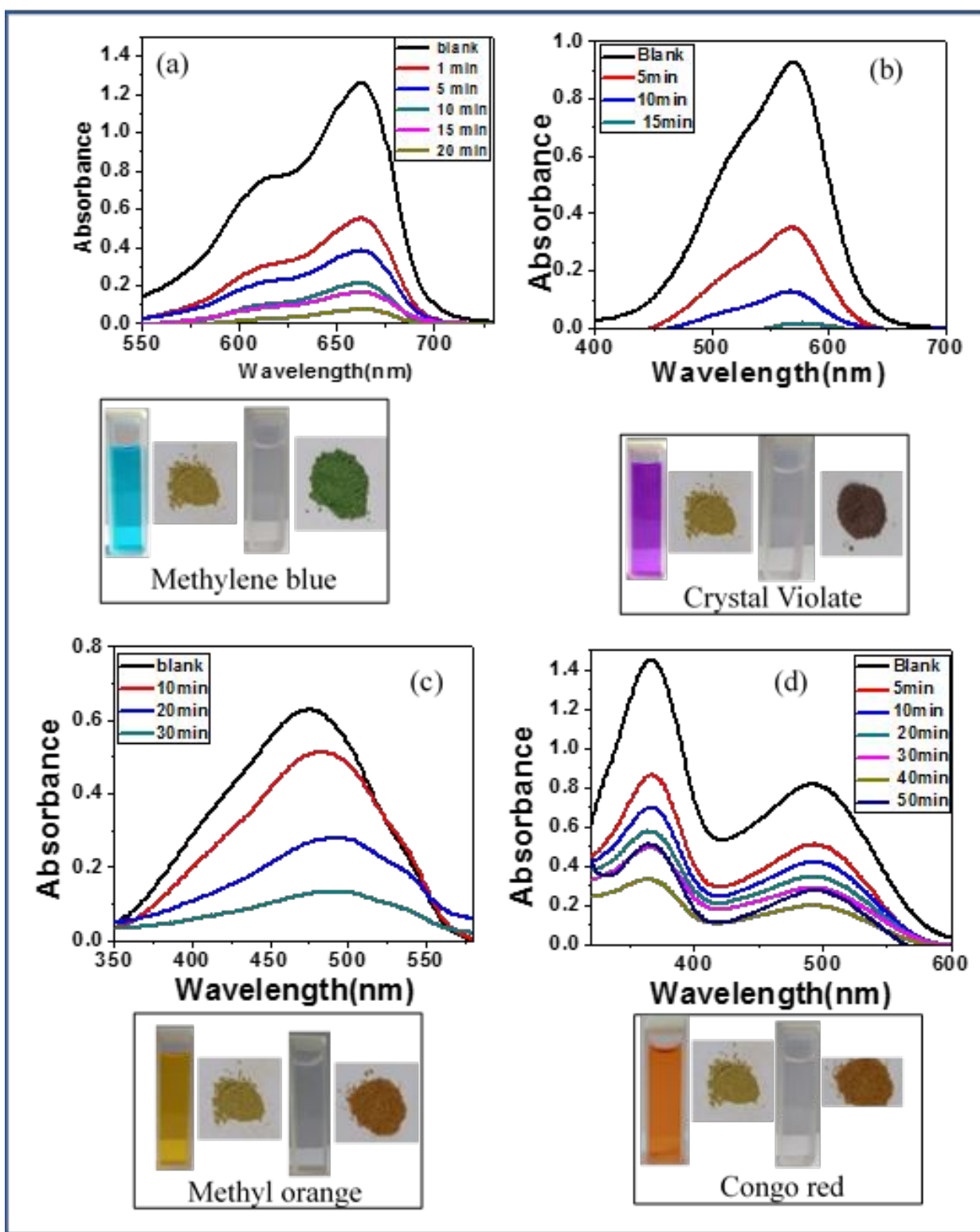


Figure S23 UV-vis spectra for the uptake of different dyes at various time intervals by COF-2 (a) methylene blue; (b) crystal violet; (c) methyl orange; (d) congo red

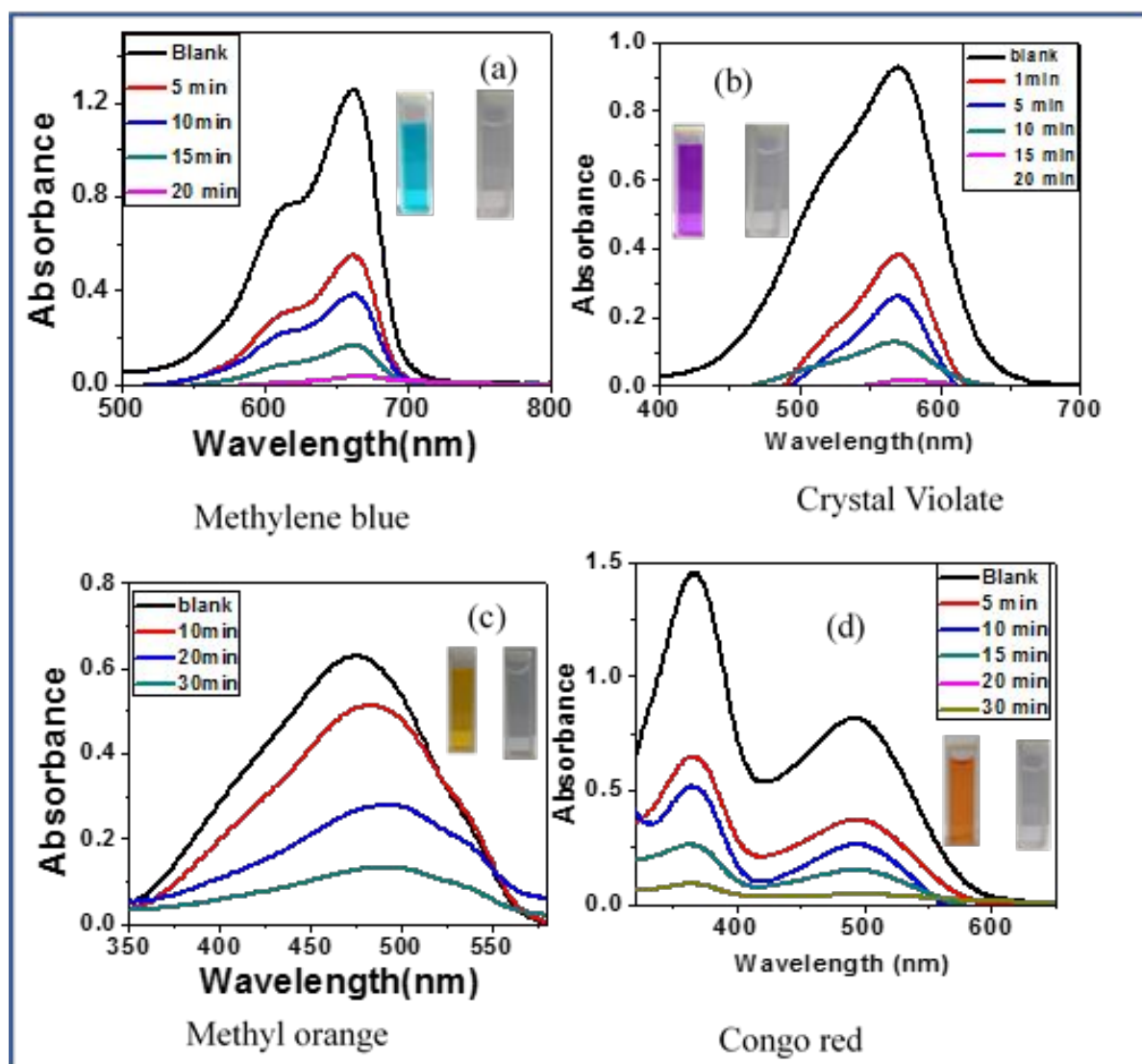


Figure S24 UV-vis spectra for the uptake of different dyes at various time intervals by COF-3 (a) methylene blue; (b) crystal violet; (c) methyl orange; (d) congo red

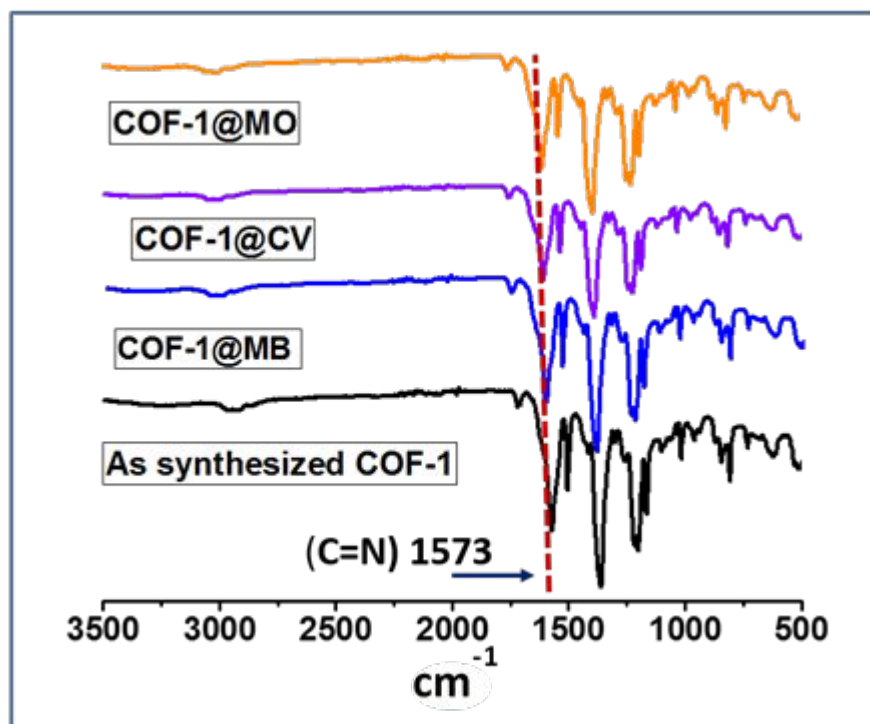


Figure S25: FTIR spectra for COF-1 after dye MB, CV, and MO adsorption desorption studies.

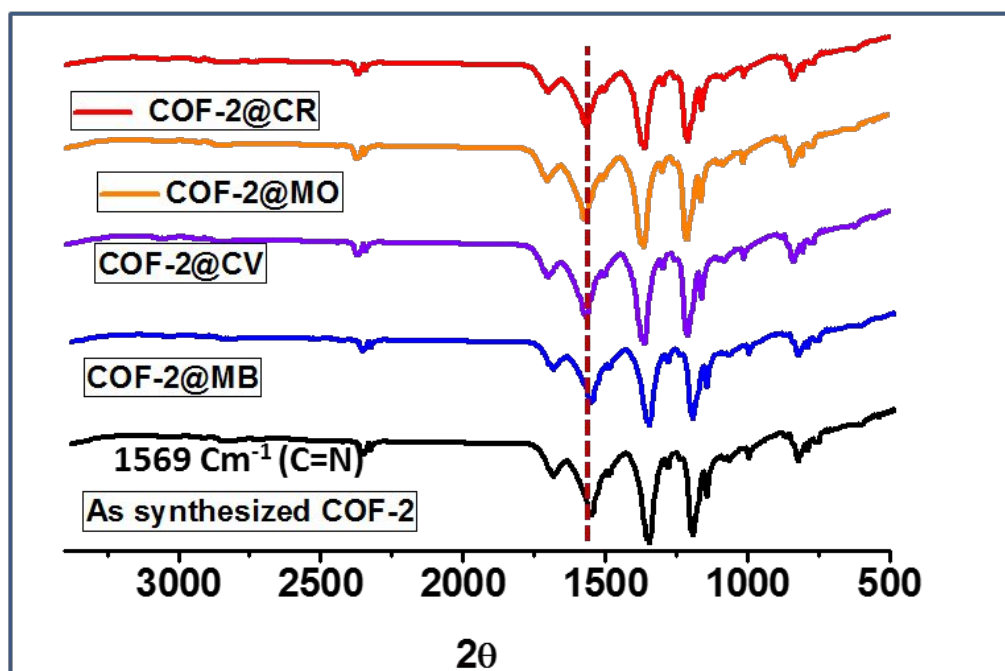


Figure S26: FTIR spectra for COF-2 after dye MB, CV, MO, and CR adsorption desorption studies.

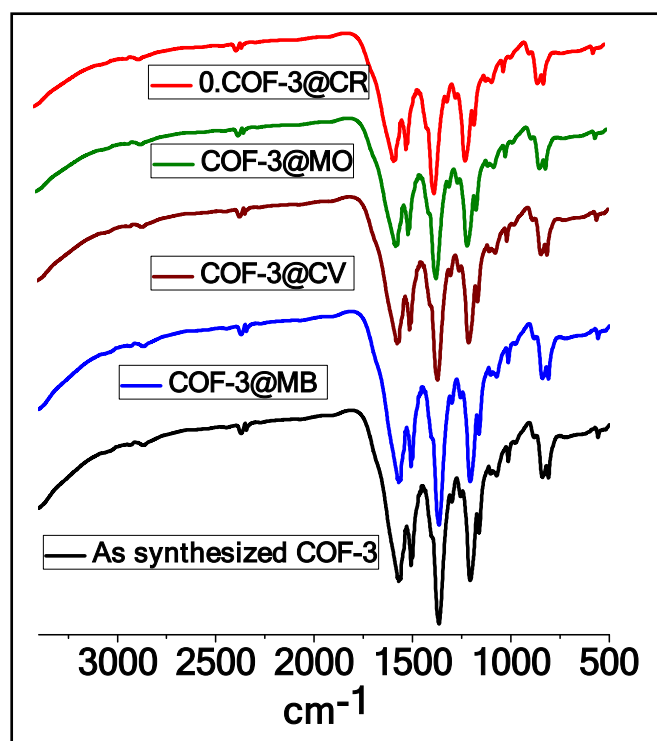


Figure S27: FTIR spectra for COF-3 after dye MB, CV, MO, and CR adsorption desorption studies.

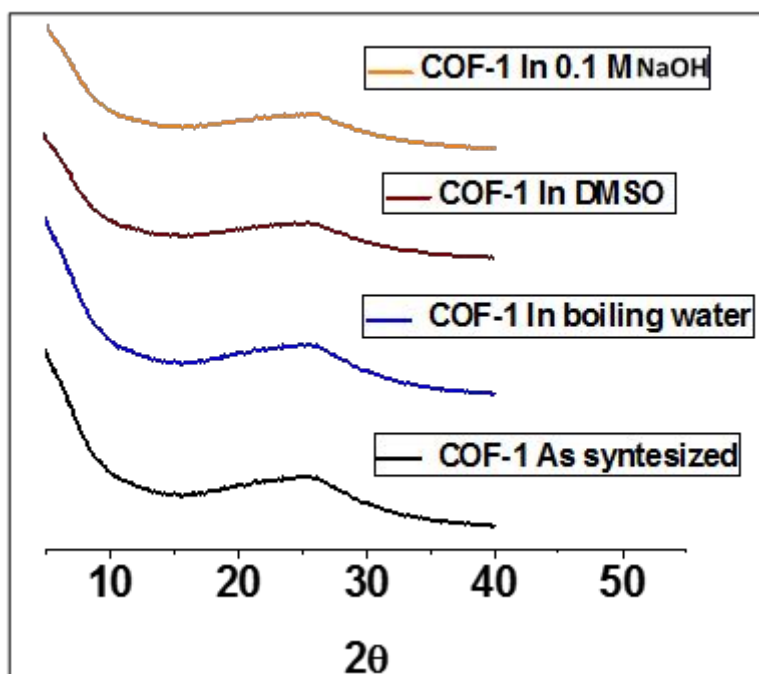


Figure S28: PXRD patterns for COF-1 after chemical treatment with boiling water, DMSO and 0.1 M NaOH.

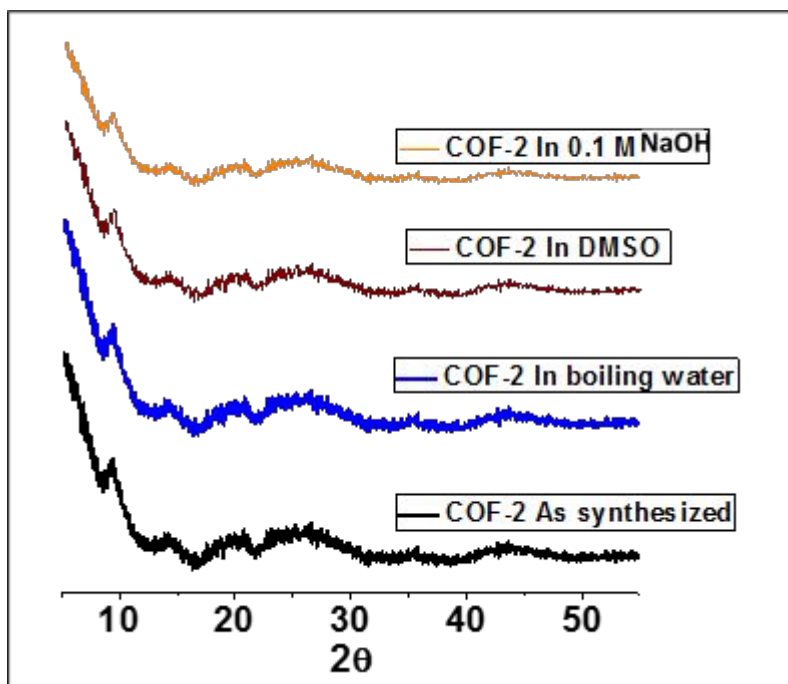


Figure S29: PXRD patterns for COF-2 after chemical treatment with boiling water, DMSO and 0.1 M NaOH.

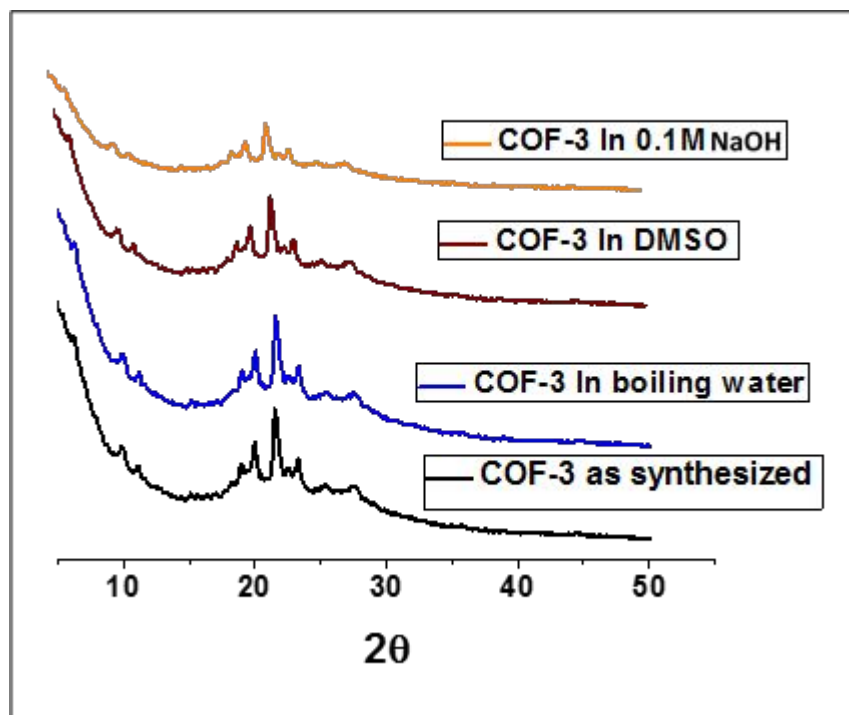


Figure S30: PXRD patterns for COF-3 after chemical treatment with boiling water, DMSO and 0.1 M NaOH.

UV-vis absorption and emission spectra of Hydrazine monohydrate:

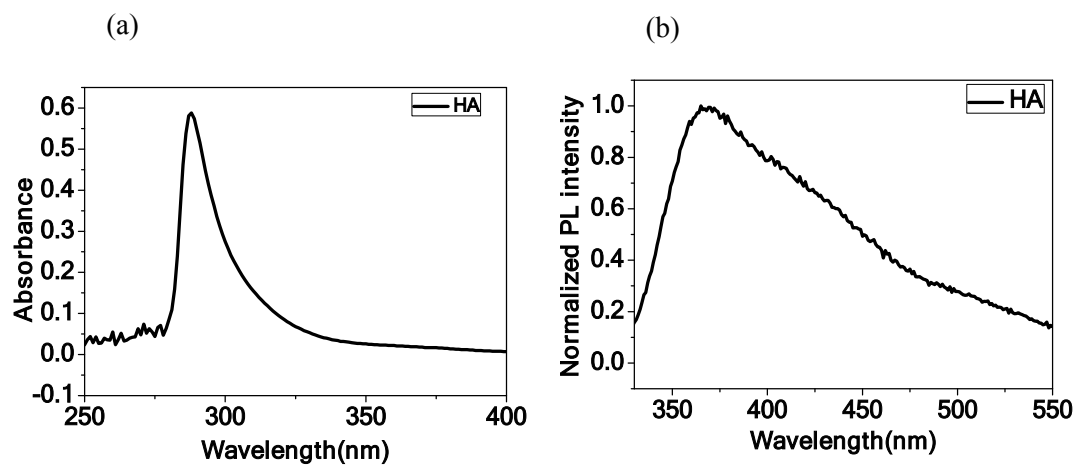


Figure S31: (a) UV-vis absorption; (b) emission spectra of HA