

Supporting Information

**Tröger's Base Functionalized Recyclable Porous Covalent Organic Polymer
(COP) for the Dye Adsorption from Water**

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General Aspects: All chemicals were purchased from available commercial sources like Sigma-Aldrich, Spectrochem, and Avra and used without further purification. Silica gel-coated aluminum sheets (ACME, 254F) were used for the Thin Layer Chromatography (TLC) analysis using EtOAc and petroleum ether as the eluents. Melting points reported were uncorrected and were recorded using a capillary melting point apparatus (Thomas Hoover). Fourier transform infrared (FT-IR) spectra were obtained with a Jasco spectrophotometer (FT-IR-4100). The ^{13}C -Solid State CP MAS nuclear magnetic resonance spectroscopy was carried out at ECZR Series 600 MHz NMR SPECTROMETER at 18 KHz. 400 MHz on a Bruker 400 and 500 MHz spectrometer using CDCl_3 and dimethyl sulfoxide- d_6 ($\text{DMSO}-d_6$) as a solvent. Chemical shifts are reported in parts per million (ppm) downfield from TMS, and the spin multiplicities are described as s (singlet), d (doublet), t (triplet), dd (doublet of doublets), brs (broad singlet), and bd (broad doublet). Coupling constant (J) values are reported in hertz (Hz). Thermogravimetric analysis (TGA) was conducted on a Perkin-Elmer Diamond TG/DTA instrument at a heating rate of 10 $^{\circ}\text{C}/\text{min}$ under a nitrogen atmosphere with a flow rate of 50 mL/min. Powder X-ray diffraction patterns (PXRD) were determined with a Bruker D8 Advance X-ray diffractometer. Scanning electron microscopy (SEM) images were taken with a Hitachi S-4800 apparatus. Surface area were calculated by the Brunauer–Emmett–Teller (BET) method. UV/vis spectra were recorded on an Jasco V-750 spectrophotometer. 3D images recorded on OLS5000 3D measuring laser micro-scope

TBTACOP Recyclability Study

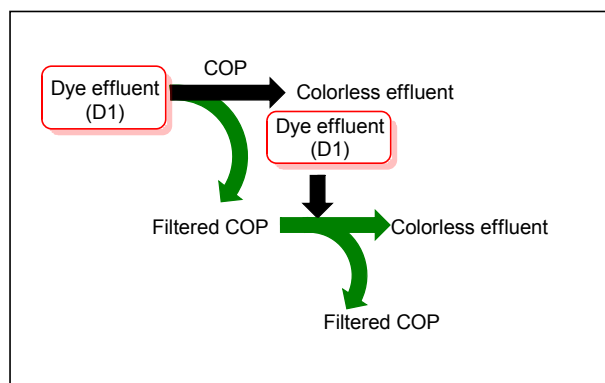


Figure S1. Recyclability study of **TBTACOP** for the removal of acid dye **D1** from the aqueous effluent.

Different Classes Of Dyes Used For The Dye Adsorption Experiment

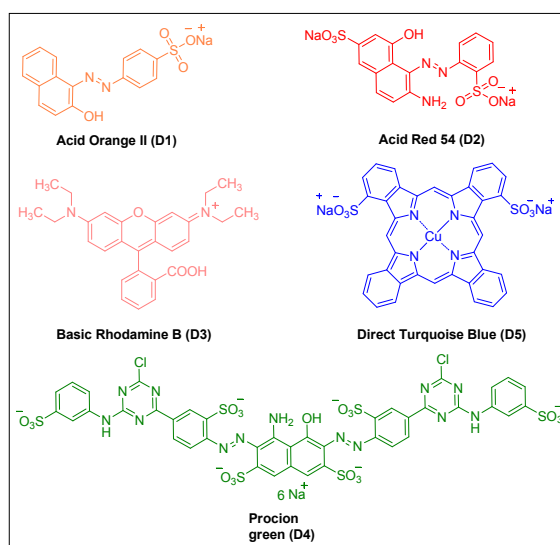


Figure S2. Structures of different dyes **D1-D5** used for the dye adsorption study.

Dye Adsorption Capacity of TBTPACOP

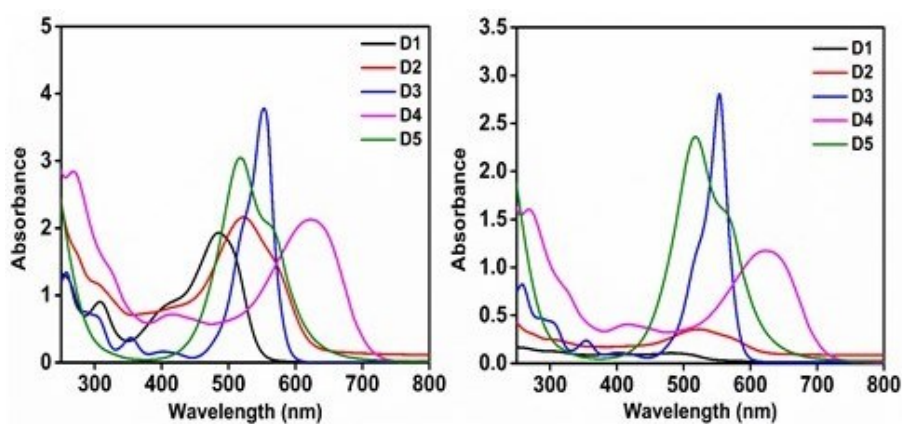


Figure S3. Absorption spectra of the Dyes **D1-D5** before and 70 mins after the addition of **TBTPACOP**.

Adsorption Selectivity Study

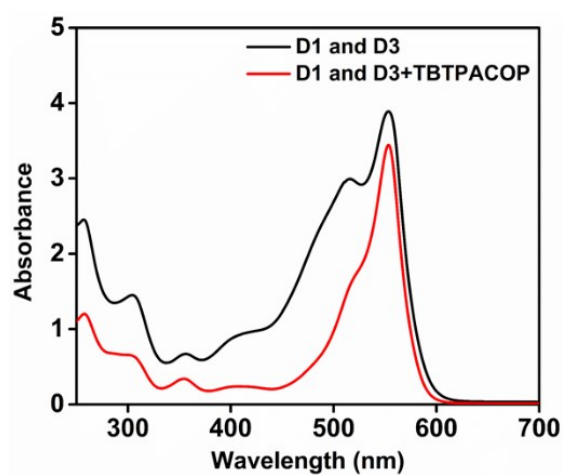


Figure S4. Absorption spectra representing the selective adsorption of **D1** over **D3** by **TBTPACOP** from a mixed dye (**D1** and **D3**) effluent.

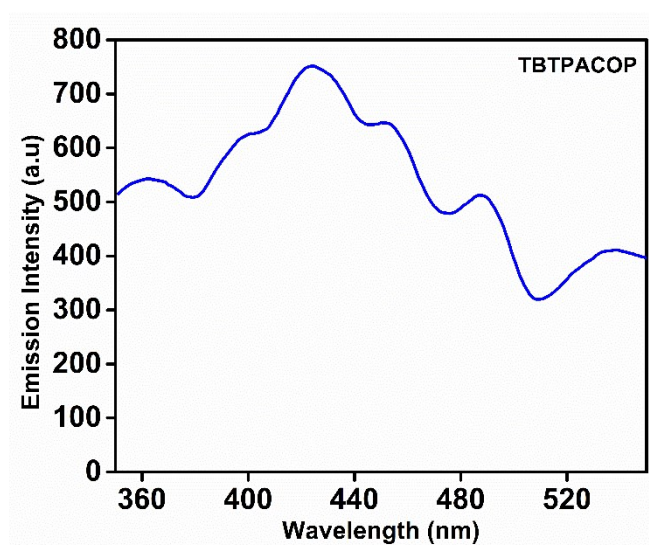


Figure S5. Emission Intensity (a.u) of **TBTPACOP**.

^1H and ^{13}C NMR spectral reproduction of compound 2 and 3

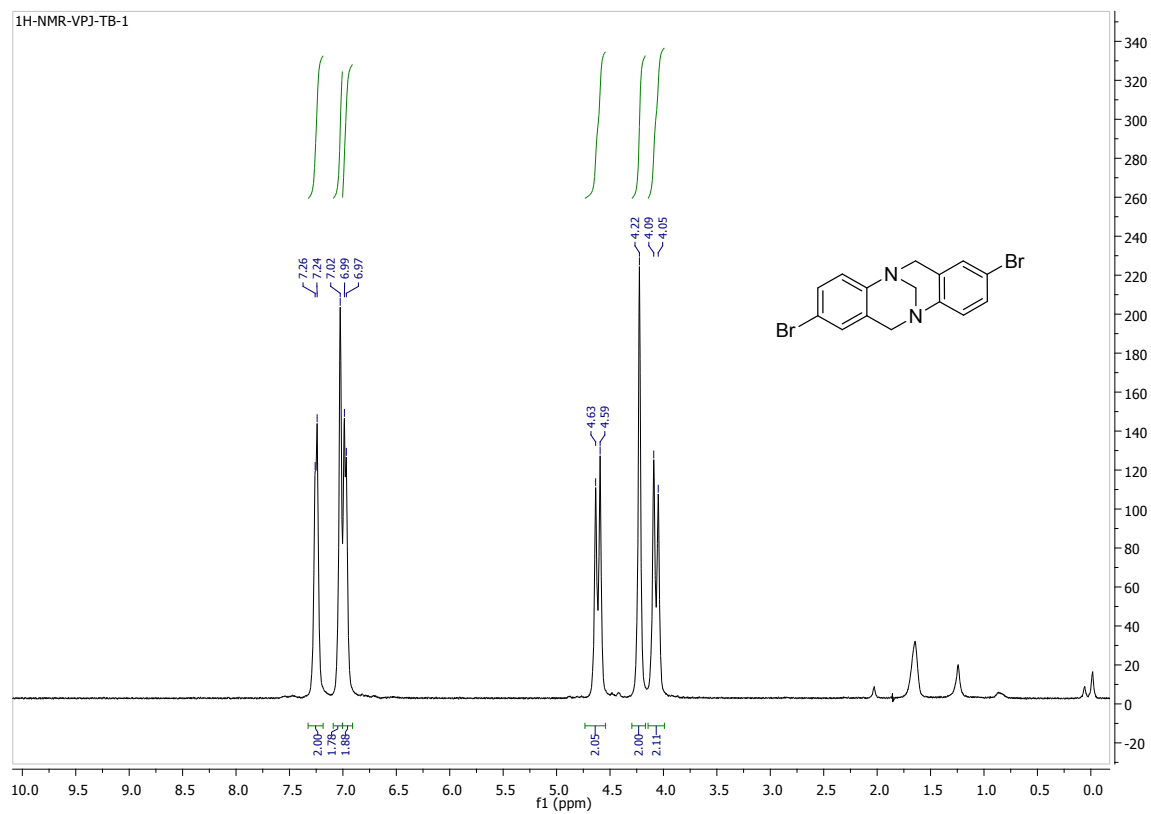


Figure S6. ^1H NMR (400 MHz, CDCl_3) of 2,8-dibromo-6,12-dihydro-5,11-methanodibenzo[*b,f*][1,5]diazocine (**2**).

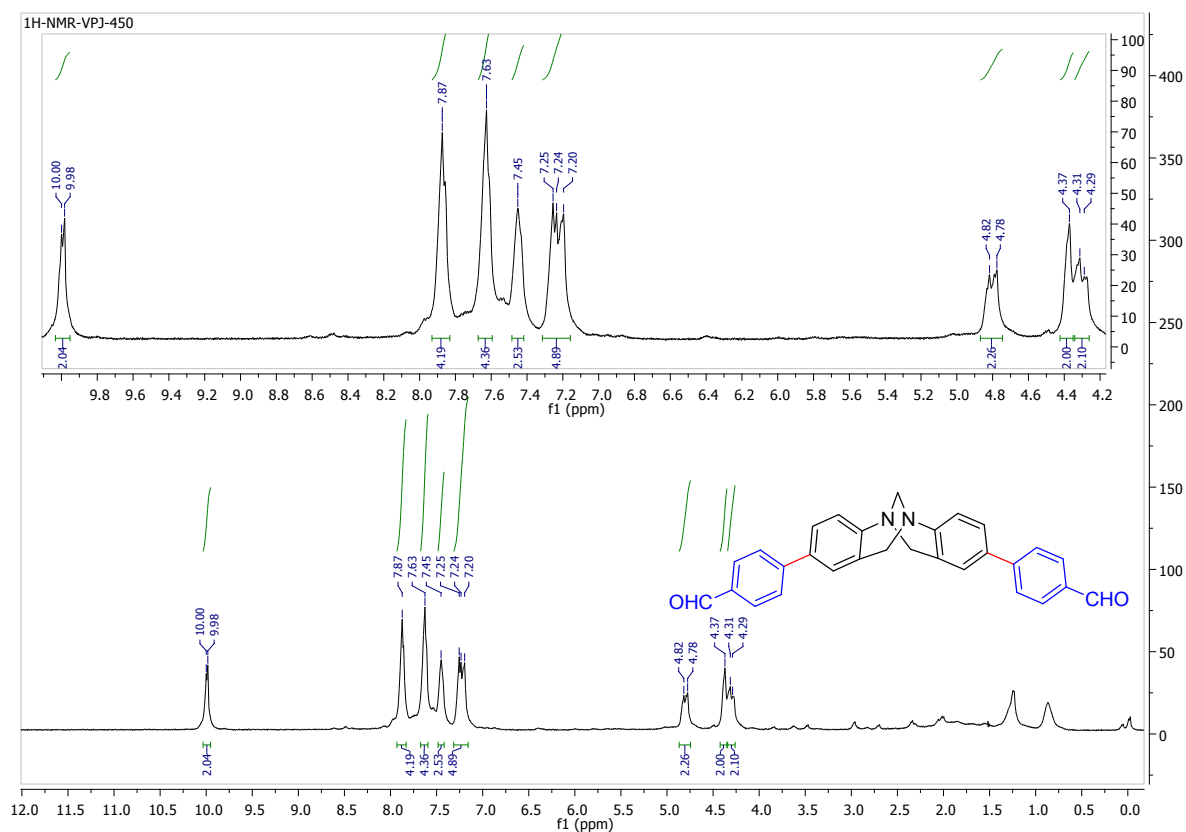


Figure S7. ^1H NMR (400 MHz, CDCl_3) of 4,4'-(6,12-dihydro-5,11-methanodibenzo[*b,f*][1,5]diazocine-2,8-diyl)dibenzaldehyde (**3**).

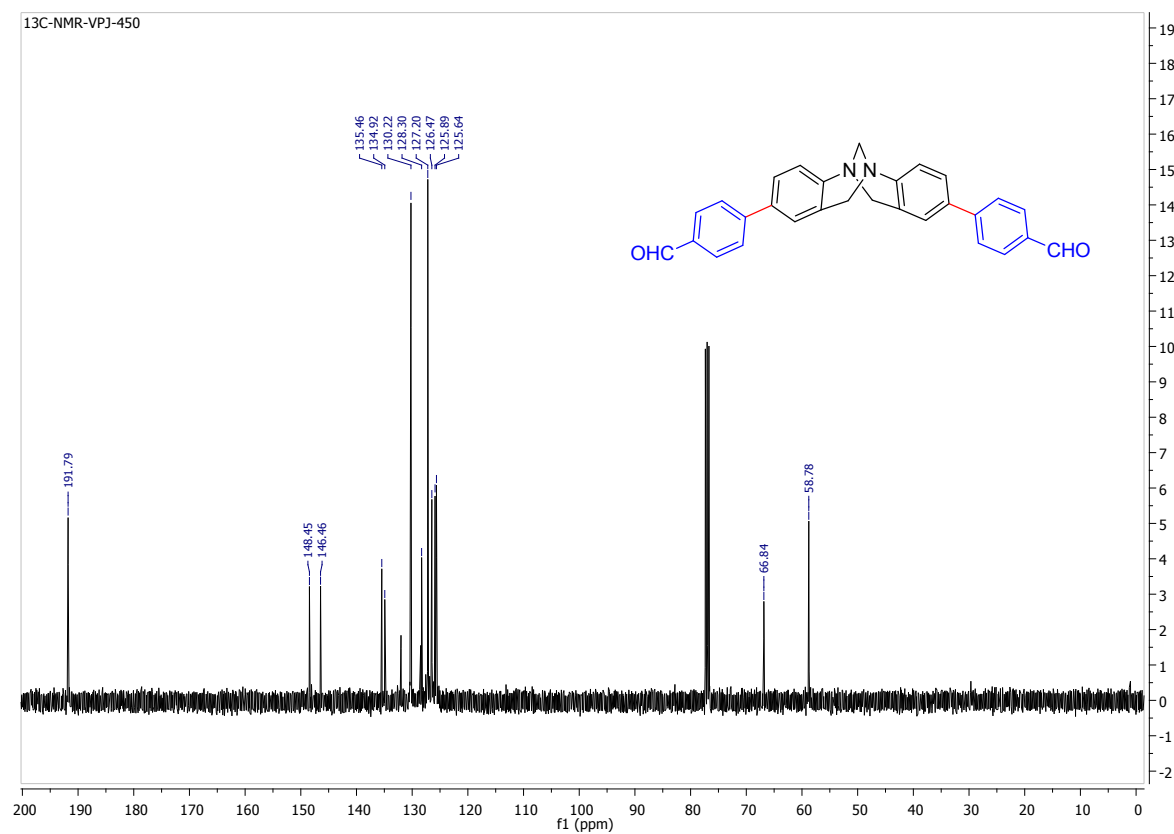


Figure S8. ^{13}C NMR (101 MHz, CDCl_3) 4,4'-(6,12-dihydro-5,11-methanodibenzo[*b,f*][1,5]diazocine-2,8-diyl)dibenzaldehyde (**3**).