Electronic Supplementary Information

Preparation and dye adsorption property of an oxygen-rich porous organic polymer

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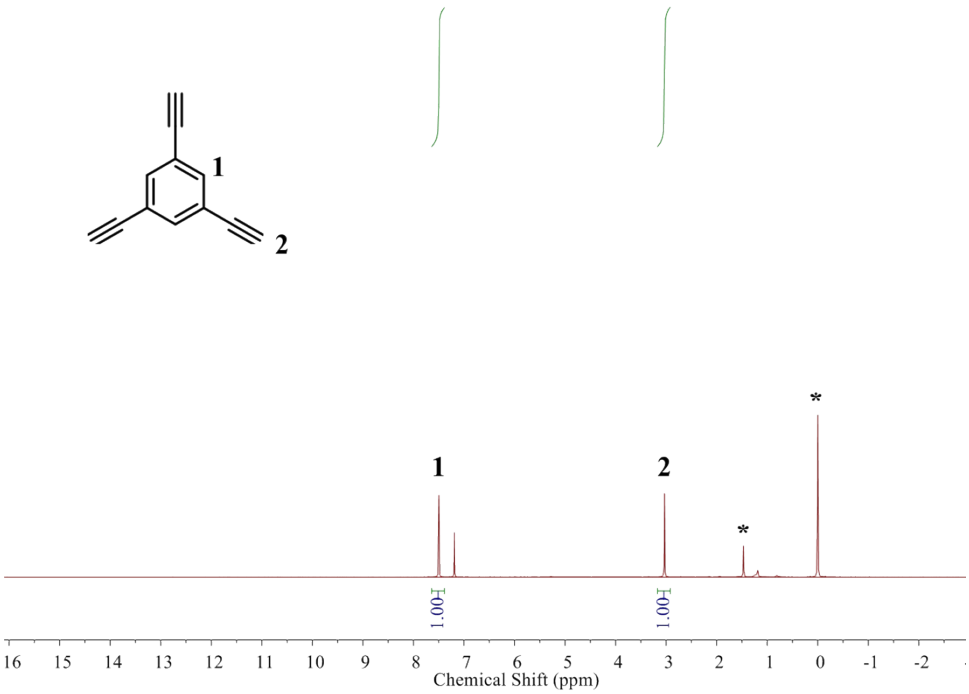
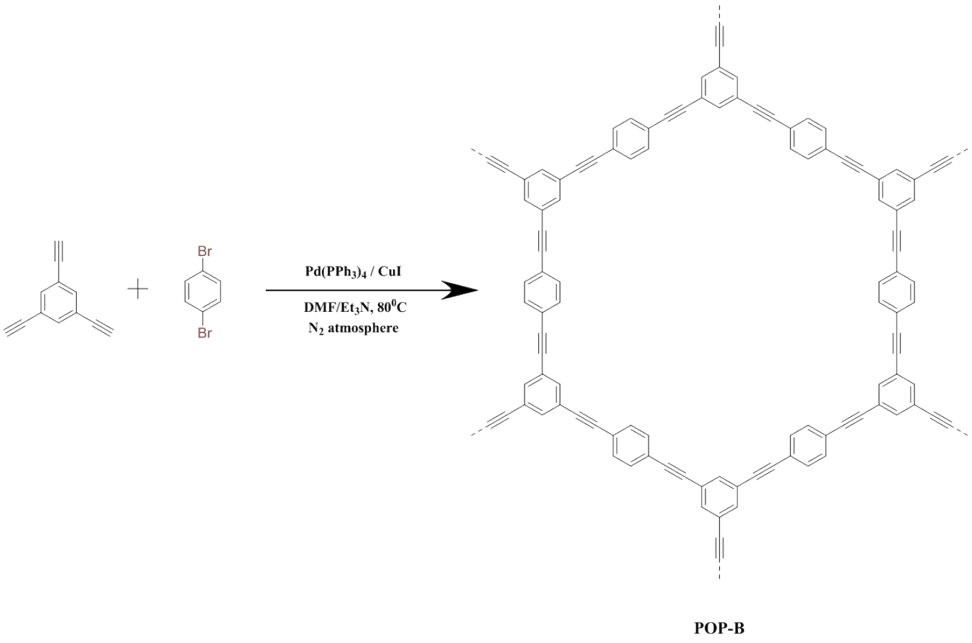


Fig. S1 NMR spectrum of 1,3,5-triethynylbenzene.



Scheme S1 Synthetic route of polymer POP-B.

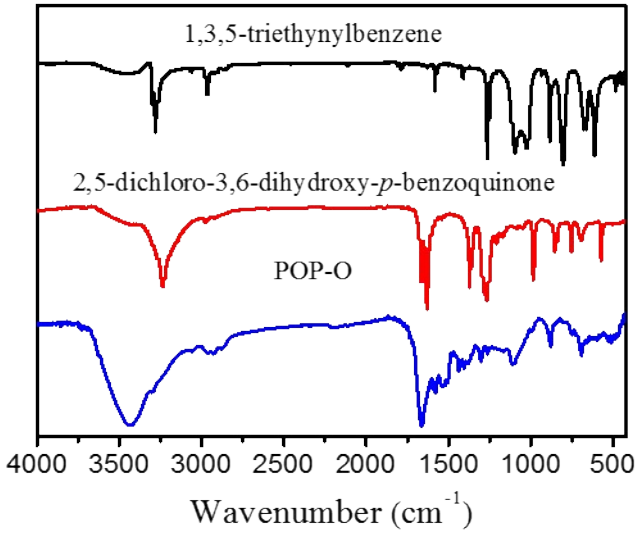


Fig. S2 Fourier transform infrared (FT-IR) spectra of 1,3,5-triethynylbenzene, 2,5-dichloro-3,6-dihydroxy-*p*-benzoquinone and POP-O.

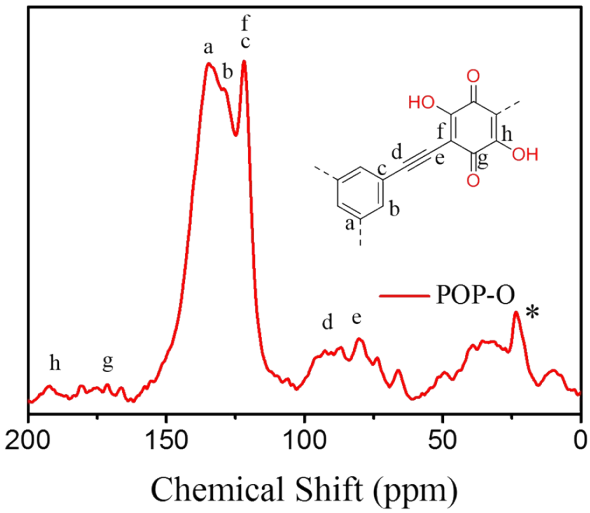


Fig. S3 Solid-state ^{13}C CP-MAS NMR spectrum of POP-O (* The characteristic broad peaks at 15 to 40 ppm may be caused by the *solvent adsorbed* in the pores of the polymer).

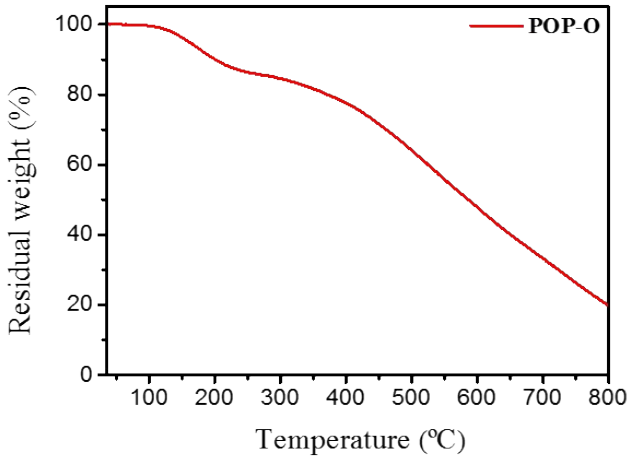


Fig. S4 Thermogravimetric analysis (TGA) analysis of POP-O.

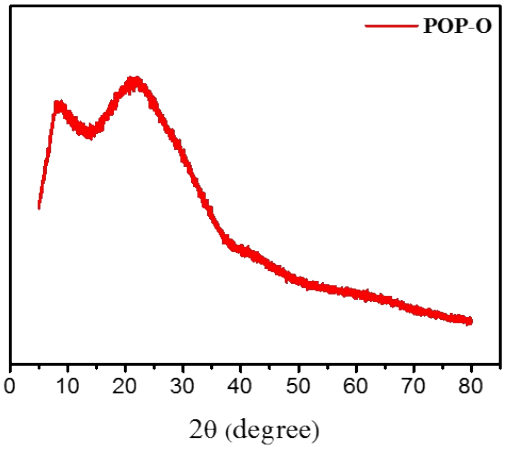


Fig. S5 PXRD pattern of POP-O.

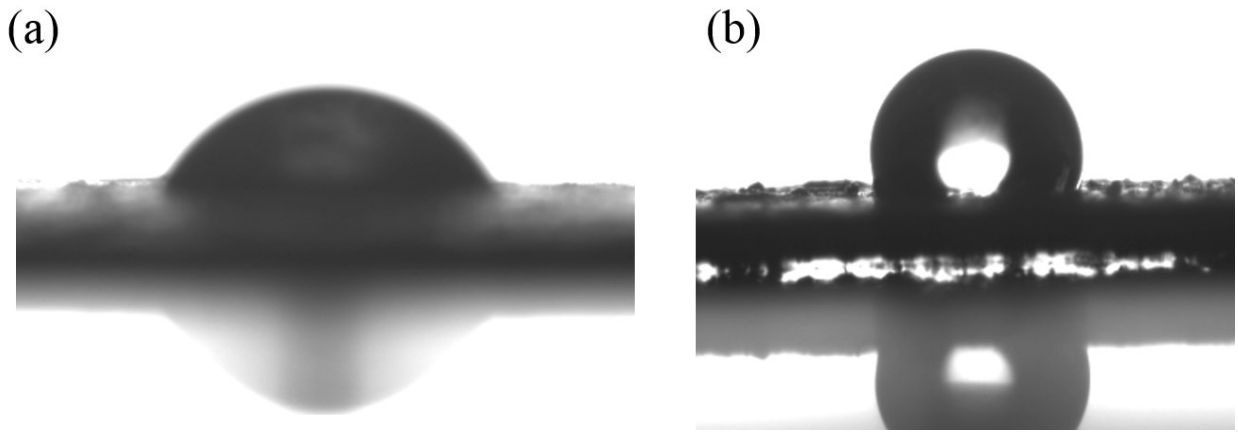


Fig. S6 Water contact angle tests of (a) POP-O and (b) POP-B.

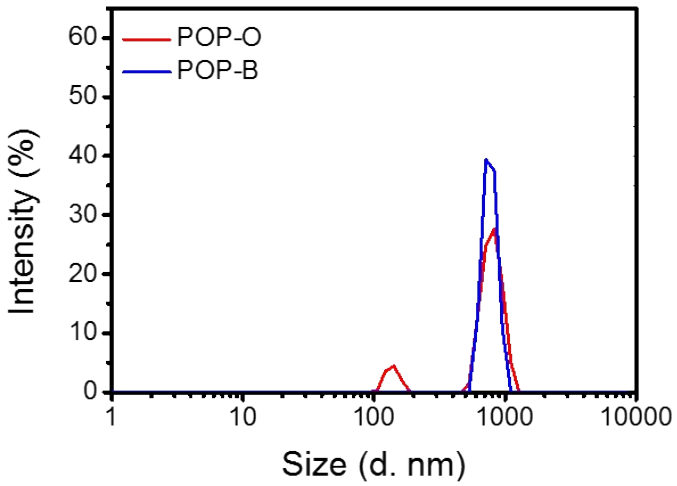


Fig. S7 The particle size distribution of the polymers in water.

Table S1 The adsorption capacity of Rhodamine B by polymers POP-O and POP-B at different times

Time (min)	Adsorption capacity (mg g^{-1}) POP-O	Adsorption capacity (mg g^{-1}) POP-B
0	0	0
10	410	142
20	496	176
40	528	210
60	524	243
90	534	289
120	547	298
240	562	330
480	576	370
960	590	390

Table S2 The adsorption capacity of Rhodamine B by polymer POP-O at different concentration

Initial concentration (mg g^{-1})	Adsorption capacity (mg g^{-1}) of POP-O
214.48165	407.066
276.66928	473.259
328.74324	520.104
481.23409	590.262
498.65915	617.262
546.04527	650.254
663.06672	686.253

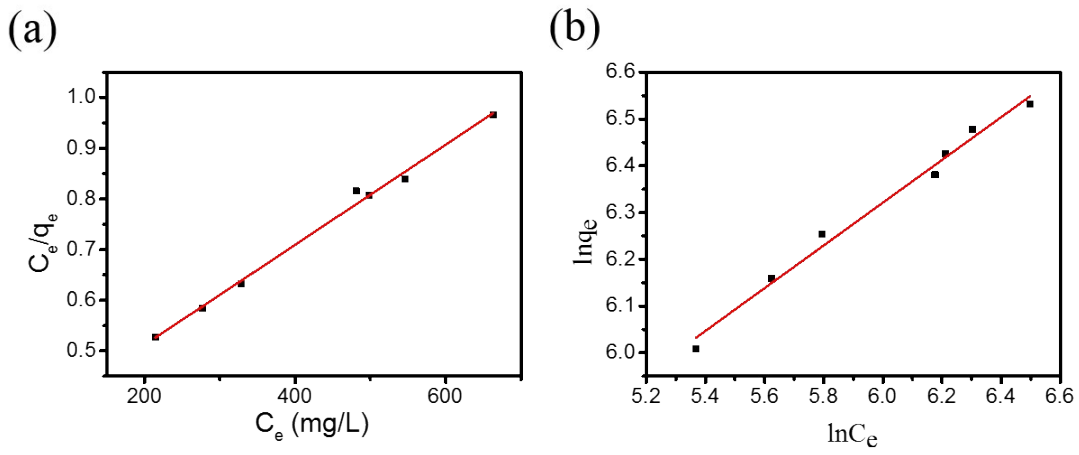


Fig. S8 Langmuir (a) and Freundlich (b) isotherms of Rh B adsorption by polymer POP-O.

Table S3 Fitting parameters of Langmuir model and Freundlich model adsorption isotherms of POP-O on Rh B

Langmuir			Freundlich		
q_m (mg g^{-1})	K_L (L g^{-1})	R^2	K_F mg g^{-1}	n	R^2
1012	0.9949	0.99272	35.826	2.187	0.98591

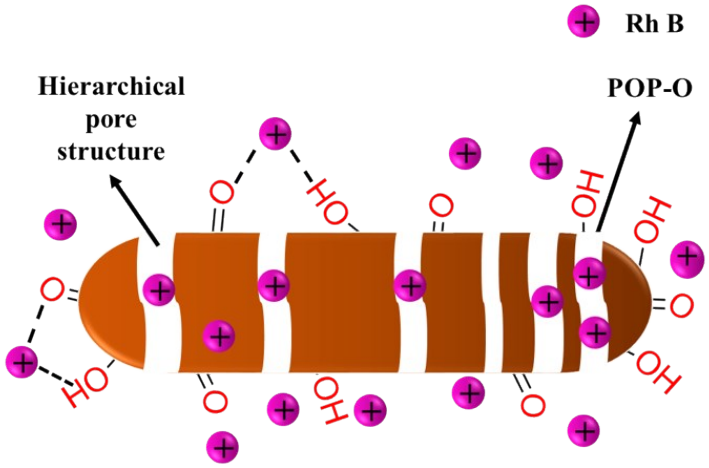


Fig. S9 Cartoon schematic diagram of the adsorption process.

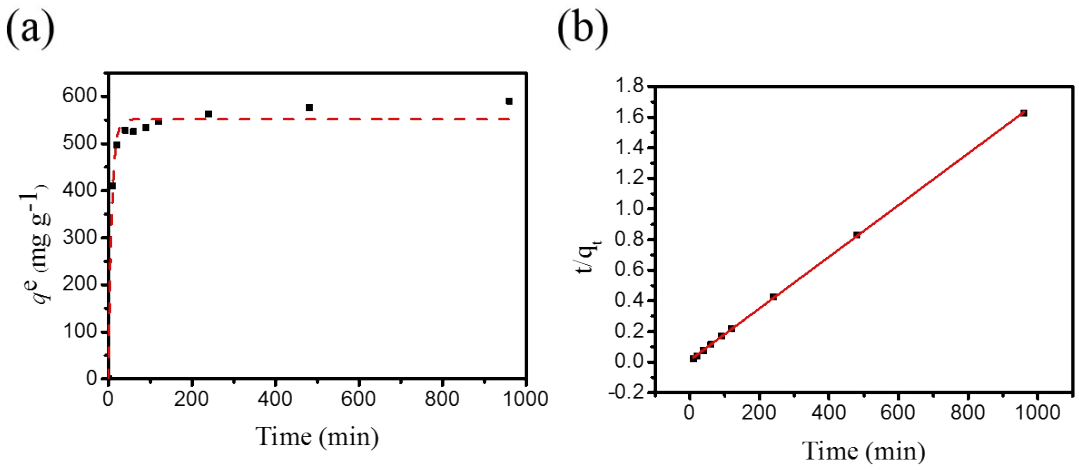


Fig. S10 Fitting curves of pseudo-first-order (a) and pseudo-second-order (b) kinetic equations for the adsorption of Rh B by POP-O.

Table S4 Fitting parameters of pseudo-first-order and pseudo-second-order models of POP-O on Rh B

Polymer	Model	K	$q_{e\ cal.}$ (mg g^{-1})	R^2	$q_{e\ exp.}$ (mg g^{-1})
POP-O	Pseudo-first-order	0.12946	551	0.98396	592
	Pseudo-second-order	0.00002168	591.7	0.99983	592

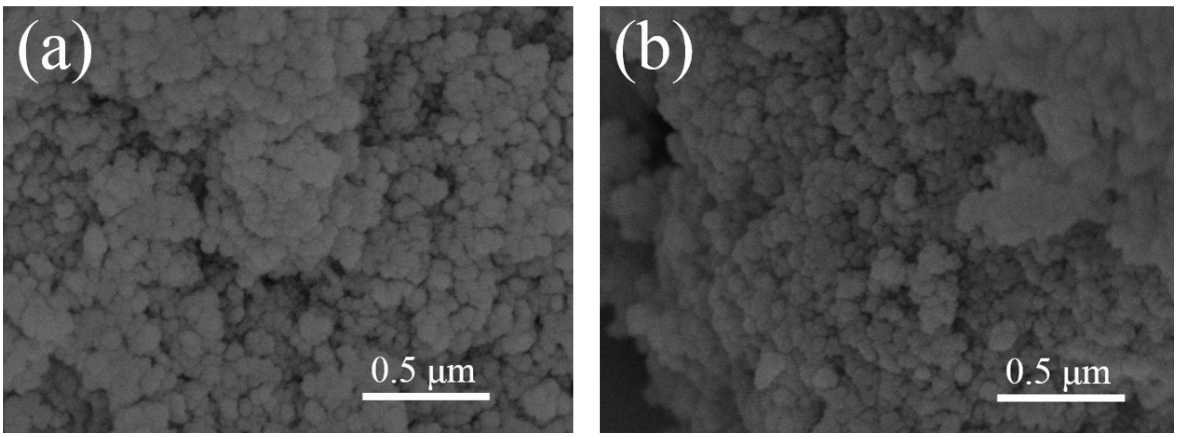


Fig. S11 SEM images of POP-O (a) before and (b) after recycling.

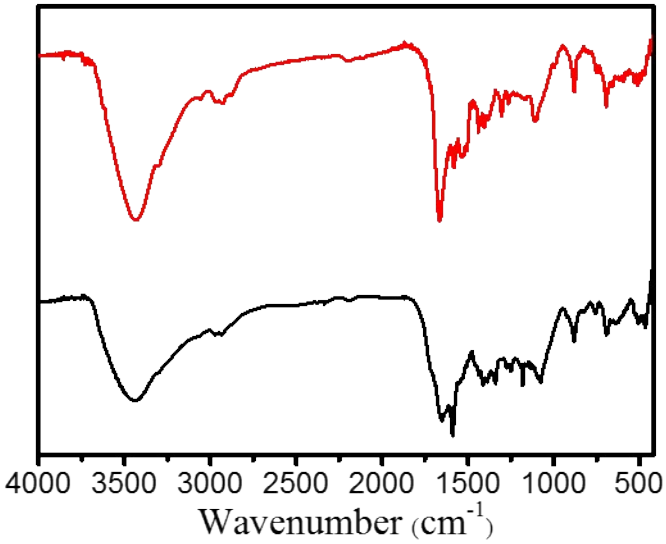


Fig. S12 FT-IR spectra of POP-O before (red) and after (black) recycling.

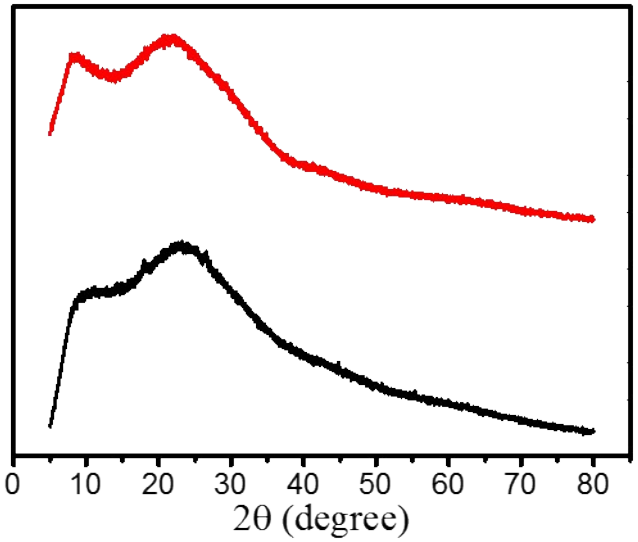


Fig. S13 PXRD patterns of POP-O before (red) and after (black) recycling.