Electronic Supplementary Material (ESI) for ChemComm.

Electronic Supplementary Information

Construction of 2D covalent organic frameworks by taking advantage of the variable orientation of imine bond

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Instruments and methods

Thermal gravimetric analysis (TGA)

Thermal gravimetric analysis was carried out on a Waters TGA Q500 by heating the samples from 30 to 950 ℃ under nitrogen atmosphere at a heating rate of 10 ^{o}C/min.

Fourier transform infrared spectroscopy (FTIR)

Fourier transform infrared spectroscopy (FTIR) was carried out with a Nicolet 380 FTIR spectrometer. The samples for IR study were prepared as KBr pellets.

Solid-state nuclear magnetic resonance (NMR) spectroscopy

The ^{13}C CP/MAS NMR spectra of the COFs were recorded on an Agilent DD2 600 Solid NMR System with 4 mm zirconia rotors. The spinning rate is 9 kHz and the contact time is 3 ms.

Scanning electron microscopy (SEM)

Scanning electron microscopy was carried out using a JEOL JSM-6390LV scanning electron microscope. The sample was dispersed over a slice of silicon wafer adhered to a flat copper platform sample holder and then coated with gold using a sputter coater (ambient temperature, 85 torr pressure in an nitrogen atmosphere, puttered for 30 s from a solid gold target at a current at 30 mA) before being submitted to SEM characterization.

Powder X-ray diffraction

Powder X-ray diffraction measurements were carried out with a X'Pert PRO Powder system using monochromated Cu/Kα(λ= 0.1542 nm). The sample was spread on the square recess of XRD sample holder as a thin layer.

Structural simulation and powder X-ray diffraction analysis

The simulations of the possible structures were carried out by using Accelrys Materials Studio 7.0 software package. Before the simulations, the structures were firstly optimized in Gaussian 09 package by semiempirical calculations at PM3 level. The stimulated PXRD patterns were determined by the Reflex module. P1 space group was used for the simulation. The Pawley refinement of the experimental PXRD was conducted by the Reflux module in the Material Studio 7.0.

Nitrogen adsorption-desorption isotherm measurement

The measurements were carried out using a Quadrasorb SI MP. Before gas adsorption measurements, the as-prepared sample (about 50 mg) was activated by being immersed in anhydrous 1,4-dioxane for 12 h for 3 times. The solvent was decanted and the sample was dried under dynamic vacuum at 120 ^{o}C for 4 h. The resulting sample was then used for gas adsorption measurements from 0 to 1 atm at 77 K. The Brunauer-Emmett-Teller (BET) method was utilized to calculate the specific surface areas. By using the non-local density functional theory model, the pore size distribution curves were derived from the sorption data.

Synthesis of HAT-NTBA-COF

HAT-6NH_2[1] (25 mg, 0.032 mmol) and NTBA[2] (21 mg, 0.064 mmol) were dissolved in a mixture of N,N-dimethylacetamide (0.75 mL) and 1,3,5-trimethylbenzene (0.75 mL) in a glass tube. The mixture was sonicated for a while and then acetic acid (6 M (aq.), 0.15 mL) was added. The system was degassed through three freeze–pump–thaw cycles and then the tube was sealed under vacuum. The mixture was heated at 120 ℃ for 3 days to afford a yellow solid at the bottom of the tube. After being cooled to room temperature, the solvent was decanted and the solid was washed with anhydrous 1,4-dioxane and acetone for 3 times respectively and then dried under dynamic vacuum at 120 ℃ for 2 h to afford a yellow powder (30.7 mg, 72%), which was insoluble in common organic solvents such as acetone, ethanol, and N, N-dimethylformamide. Anal. Calcd. For $C_{90}H_{54}N_{14}$: C, 81.18; H, 4.09; N, 14.73. Found: C, 73.03; H, 4.42; N, 13.54.

Synthesis of HAT-NTBCA-COF

HAT-6NH_2[1] (21 mg, 0.027 mmol) and NTBCA[3] (30 mg, 0.054 mmol) were dissolved in a mixture of N,N-dimethylacetamide (0.75 mL) and 1,3,5-trimethylbenzene (0.75 mL) in a glass tube. The mixture was sonicated for a while and then acetic acid (6 M (aq.), 0.15 mL) was added. The system was degassed through three freeze–pump–thaw cycles and then the tube was sealed under vacuum. The mixture was heated at 120 ℃ for 3 days to afford a yellow solid at the bottom of the tube. After being cooled to room temperature, the solvent was decanted and the solid was washed with anhydrous 1,4-dioxane and acetone for 3 times respectively and then dried under

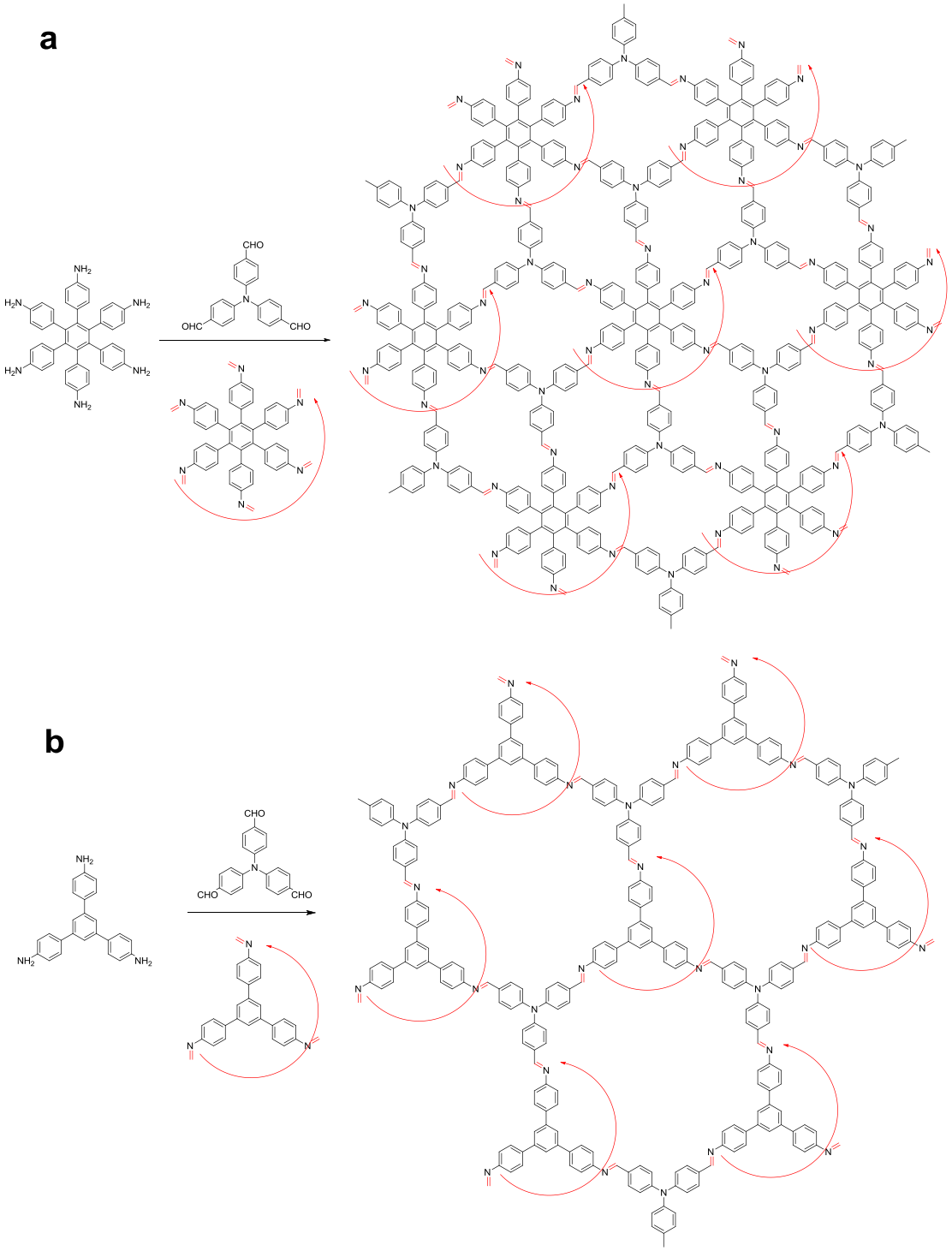
dynamic vacuum at 120 ℃ for 2 h to afford a yellow powder (31.4 mg, 65%), which was insoluble in common organic solvents such as acetone, ethanol, and N, N-dimethylformamide. Anal. Calcd. For $C_{126}H_{78}N_{14}$: C, 84.64; H, 4.40; N, 10.97. Found: C, 74.74; H, 4.83; N, 9.53.

References for the synthesis of the monomers:

1 T.-G. Zhan, T.-Y. Zhou, Q.-Y. Qi, J. Wu, G.-Y. Li and X. Zhao, *Polym. Chem.*, 2015, **6**, 7586-7593.

2 Y. Sun, Y. Sun, Q. Pan, G. Li, B. Han, D. Zeng, Y. Zhang and H. Cheng, *Chem. Commun.*, 2016, **52**, 3000-3002.

3 B. Jędrzejewska, M. Gordel, J. Szeremeta, P. Krawczyk and M. Samoc, *J. Org. Chem*., 2015, **80**, 9641-9651.



Scheme S1. Illustration for the construction of COFs from the combination of (a) C_6-symmetric and C_3-symmetric monomers, and (b) two common C_3-symmetric monomers, in which the adoption of a homodromous orientation of C=N linkages can be observed.

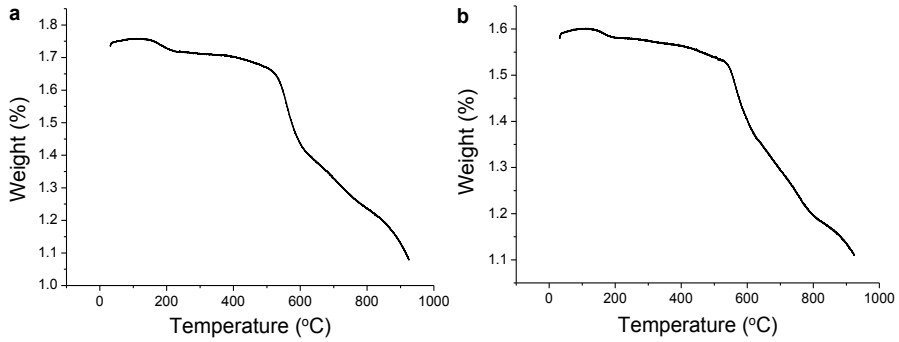


Figure S1. TGA profiles of (a) **HAT-NTBA-COF** and (b) **HAT-NTBCA-COF**.

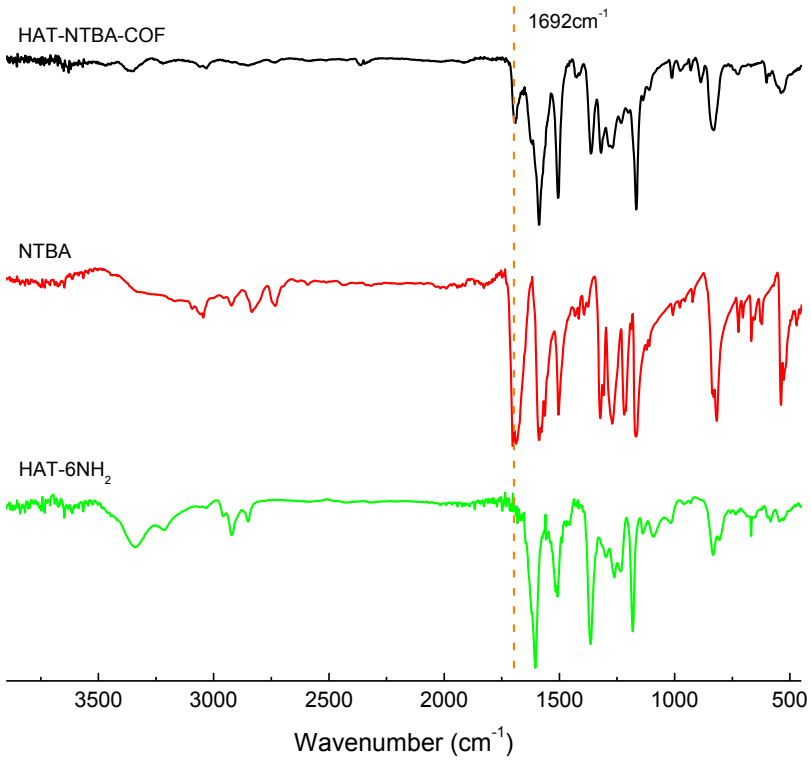


Figure S2. FTIR spectra of **HAT-6NH$_2$** (green), **NTBA** (red) and **HAT-NTBA-COF** (black).

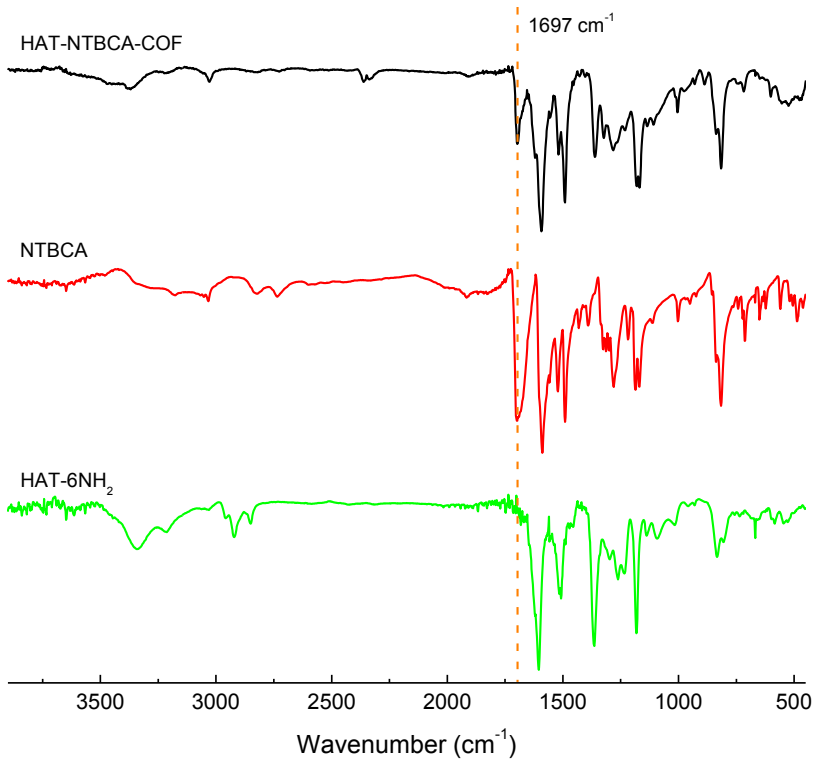


Figure S3. FTIR spectra of **HAT-6NH$_2$** (green), **NTBCA** (red) and **HAT-NTBCA-COF** (black).

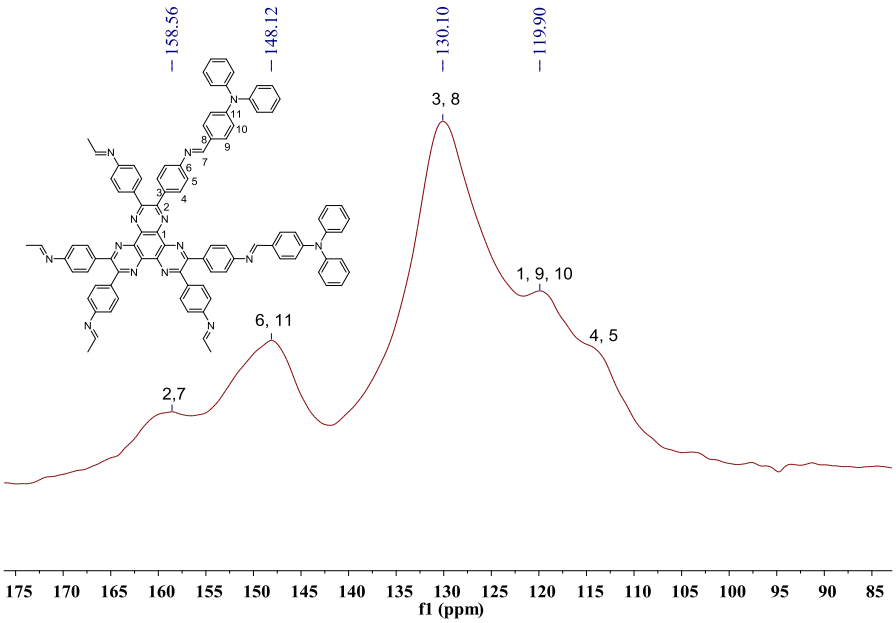


Figure S4. Solid-state ^{13}C CP/MAS NMR Spectrum of **HAT-NTBA-COF**.

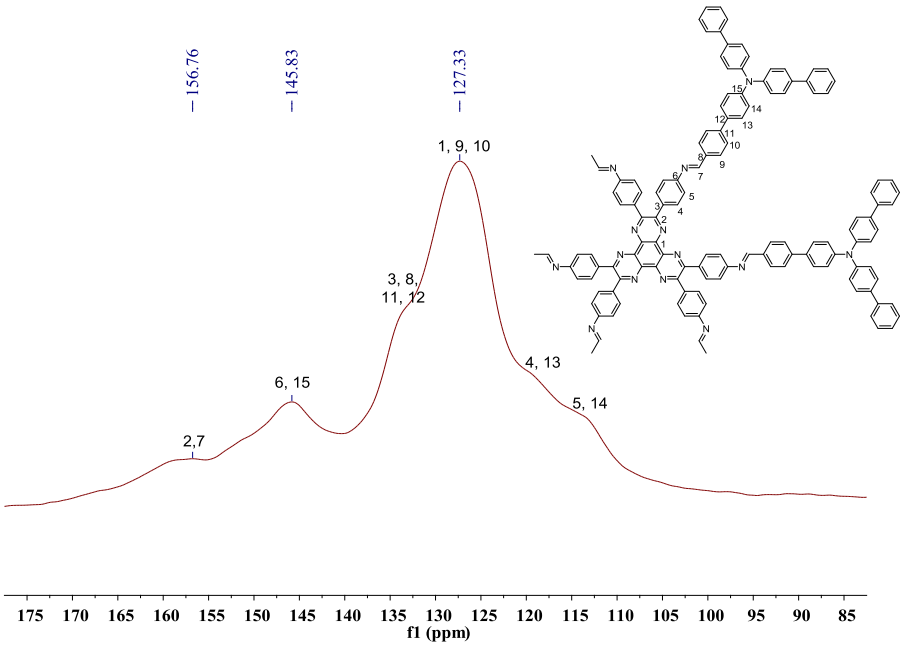


Figure S5. Solid-state ^{13}C CP/MAS NMR Spectrum of **HAT-NTBCA-COF**.

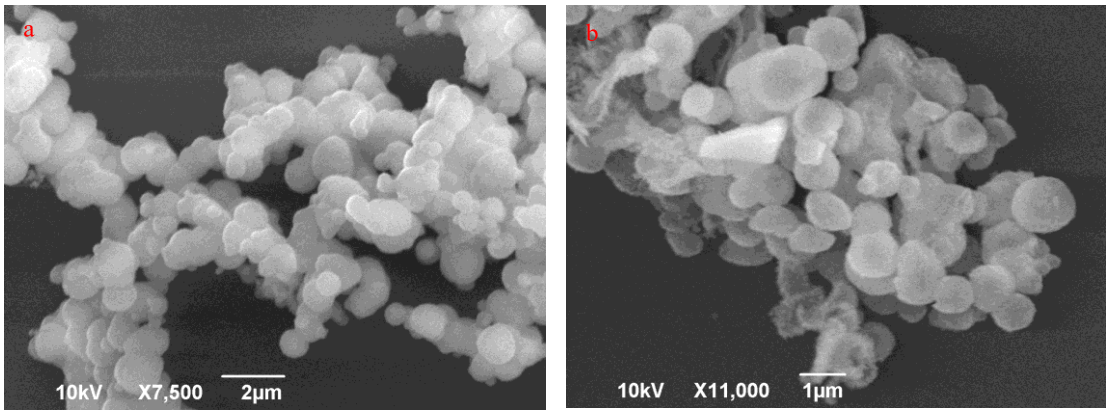


Figure S6. SEM images of (a) **HAT-NTBA-COF** and (b) **HAT-NTBCA-COF**.

Table S1. Calculated total energies of eclipsed structure of **HAT-NTBA-COF** at different layer distances.

Layer distance (Å)	Total energy (kcal/mol)
3.00	797.737
3.10	695.822
3.20	760.132
3.30	641.239
3.40	675.259
3.50	640.398
3.60	580.212
3.70	568.645
3.80	539.224
3.90	514.947
4.00	523.504
4.10	**507.257**
4.20	534.597
4.30	519.460
4.40	535.572
4.50	526.099
4.60	540.876
4.70	531.523
4.80	584.733
4.90	665.826
5.00	544.146

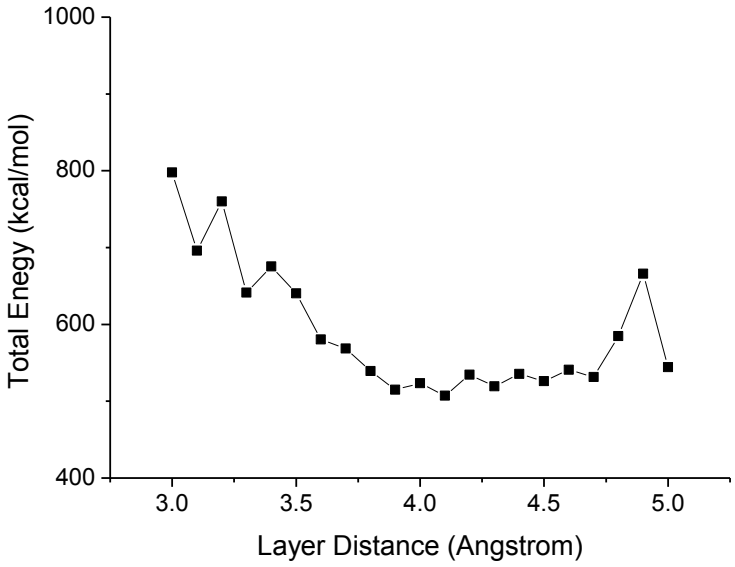


Figure S7. Plot of total energy of eclipsed structure of **HAT-NTBA-COF** vs. layer distance.

Table S2. Calculated total energies of eclipsed structure of **HAT-NTBCA-COF** at different layer distances.

Layer distance (Å)	Total energy (kcal/mol)
3.00	1356.937
3.10	1291.528
3.20	1251.632
3.30	1215.800
3.40	1190.406
3.50	1178.249
3.60	1155.517
3.70	1149.438
3.80	1151.582
3.90	1146.941
4.00	1135.214

4.10	1136.737
4.20	**1133.160**
4.30	1141.351
4.40	1145.569
4.50	1145.083
4.60	1144.101
4.70	1146.100
4.80	1146.740
4.90	1157.809
5.00	1156.300

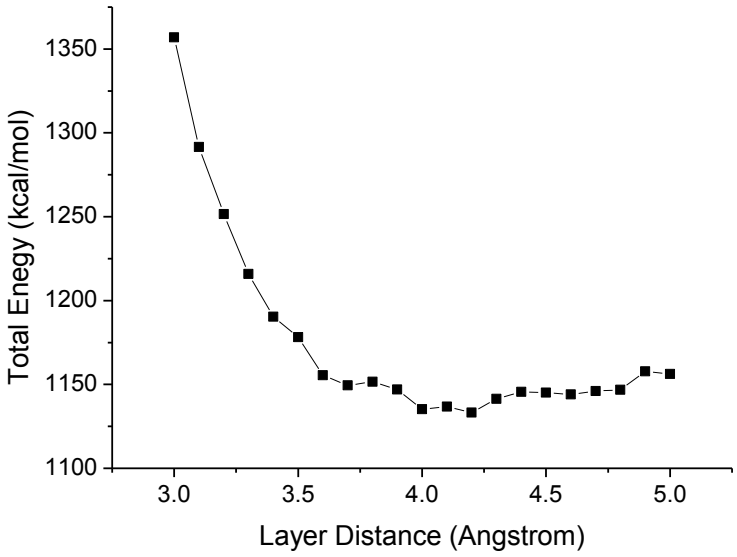


Figure S8. Plot of total energyof eclipsed structure of **HAT-NTBCA-COF** vs. layer distance.

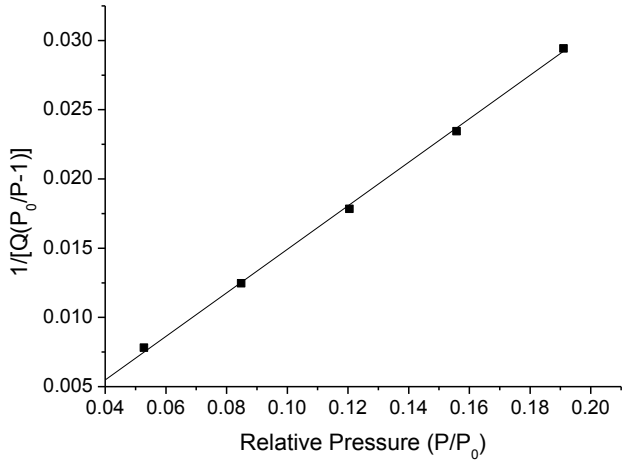


Figure S9. BET surface area plot for **HAT-NTBA-COF** calculated from the isotherm.

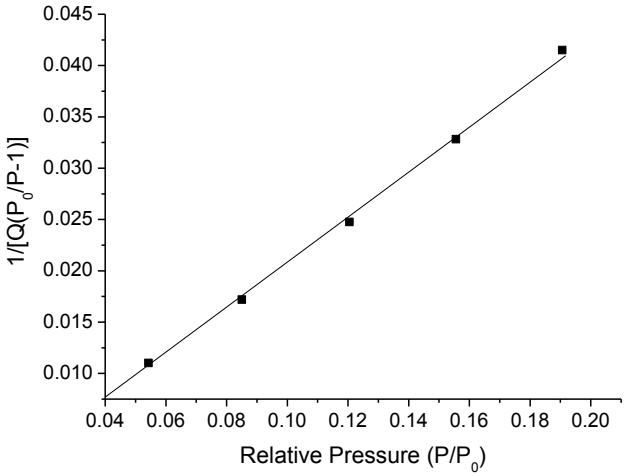


Figure S10. BET surface area plot for **HAT-NTBA-COF** calculated from the isotherm.

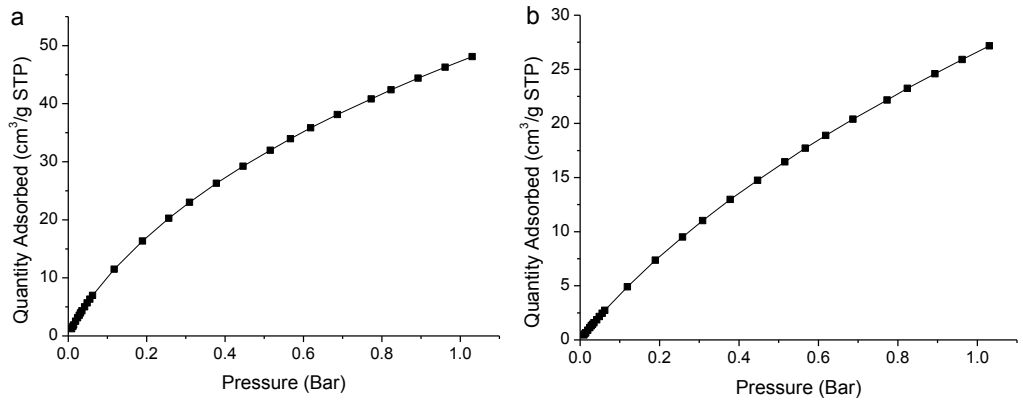


Figure S11. CO_2 adsorption isotherms of **HAT-NTBA-COF** at (a) 273 K and (b) 298 K.

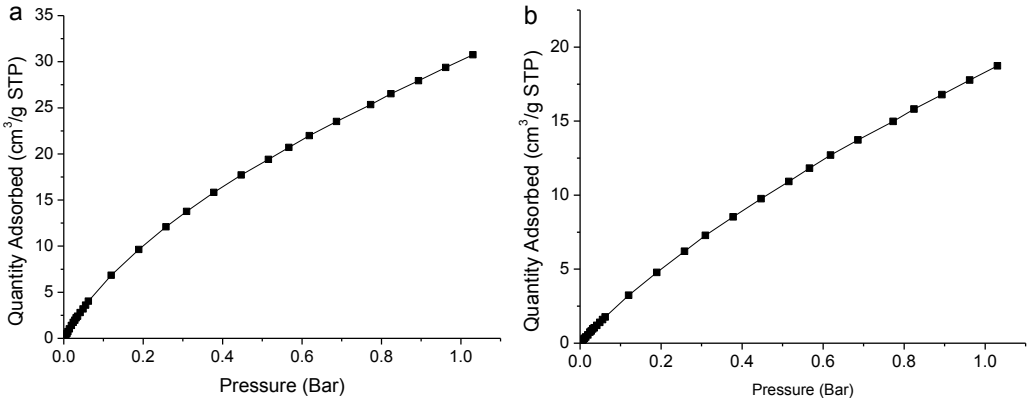


Figure S12. CO_2 adsorption isotherms of **HAT-NTBCA-COF** at (a) 273 K and (b) 298 K.

Table S3. Fractional atomic coordinates for the unit cell of **HAT-NTBA-COF** with AA stacking.

P1							
a = b = 25.83 Å, c = 4.10 Å, α = β = 90º, and γ = 120 º							
H1	1.104463	0.872028	0.707929	C80	1.022049	0.732949	0.280638
H2	1.21074	0.930704	0.792572	C81	1.0582	0.793289	0.185044
H3	1.206308	1.095346	0.713967	C82	1.043415	0.836471	0.259978
H4	1.100246	1.040648	0.61932	C83	0.683899	0.67386	1.324726
H5	0.912359	0.744027	0.67452	C84	0.660926	0.613599	1.373958
H6	0.938618	0.669955	0.517282	C85	0.688465	0.582683	1.252673
H7	1.100382	0.80728	0.056394	C86	0.74231	0.615872	1.079396
H8	1.073412	0.883934	0.194658	C87	0.766533	0.676122	1.025442
H9	0.656946	0.692817	1.423382	C88	0.66035	0.831609	1.197323
H10	0.618766	0.588475	1.509927	C89	0.603839	0.820186	1.117104
H11	0.766162	0.594376	0.977198	C90	0.563168	0.766475	0.961431
H12	0.808758	0.69969	0.887653	C91	0.581234	0.725027	0.889846
H13	0.691918	0.875297	1.307239	C92	0.636731	0.73468	0.971781
H14	0.59096	0.853722	1.177706	C93	0.874601	1.135653	1.26358
H15	0.549408	0.682366	0.772964	C94	0.835623	1.155276	1.349633
H16	0.643904	0.698377	0.892674	C95	0.779593	1.117932	1.491446
H17	0.915927	1.170843	1.144693	C96	0.763796	1.05875	1.557523
H18	0.848128	1.201821	1.292526	C97	0.801457	1.037602	1.481979
H19	0.720705	1.02789	1.671435	C98	1.051459	1.152441	1.04505
H20	0.785963	0.990529	1.543309	C99	1.08448	1.213766	1.011886
H21	1.061829	1.124377	0.886451	C100	1.068299	1.25151	1.175661
H22	1.122373	1.232263	0.841042	C101	1.021035	1.225236	1.402276
H23	1.009288	1.25383	1.545814	C102	0.98894	1.164024	1.446328
H24	0.951029	1.141628	1.617072	C103	0.683599	1.110114	1.580617
H25	0.657519	1.060746	1.581231	C104	1.138895	1.345559	0.91184
H26	1.161987	1.327534	0.766839	C105	1.300114	1.098564	1.021493

H27	1.273611	1.118286	1.108543	C106	1.08985	0.69966	0.12682
H28	1.118699	0.73894	-0.02328	C107	0.682562	0.486766	1.223101
H29	0.727037	0.505116	1.109973	C108	0.466489	0.757851	1.042467
H30	0.478237	0.786413	1.258689	C109	1.156314	1.407731	0.855467
H31	1.391445	1.076716	0.835772	C110	1.363012	1.130665	1.104628
H32	1.495584	1.134444	0.986301	C111	1.405	1.115241	0.998023
H33	1.457155	1.252122	1.559784	C112	1.464904	1.148214	1.085786
H34	1.355055	1.196472	1.396581	C113	1.487065	1.198421	1.29208
H35	1.224399	1.421395	0.49982	C114	1.445017	1.214528	1.39388
H36	1.257492	1.525983	0.393145	C115	1.385224	1.181442	1.303246
H37	1.130536	1.51971	1.100858	C116	1.202374	1.441796	0.634732
H38	1.09408	1.414496	1.187638	C117	1.221852	1.501735	0.574054
H39	1.643452	1.296245	0.990111	C118	1.197336	1.532214	0.738895
H40	1.700908	1.404257	0.931738	C119	1.150287	1.498153	0.955847
H41	1.58551	1.421133	1.638602	C120	1.130233	1.437757	1.008863
H42	1.533487	1.314331	1.724711	C121	1.184636	1.616867	0.544155
H43	1.506453	1.110215	1.475816	C122	1.283062	1.636573	0.77845
H44	1.563308	1.061387	1.548782	C123	1.581465	1.295415	1.349805
H45	1.726392	1.232387	1.567199	C124	1.58276	1.201341	1.451777
H46	1.670764	1.282213	1.499295	C125	1.630414	1.32371	1.135367
H47	1.307359	1.568139	0.886537	C126	1.663013	1.385432	1.102786
H48	1.408465	1.635677	1.030937	C127	1.647306	1.422542	1.273639
H49	1.381823	1.786513	0.887818	C128	1.598903	1.394539	1.488406
H50	1.279775	1.720025	0.744827	C129	1.567189	1.332747	1.529906
H51	1.258355	1.686707	0.276742	C130	1.555269	1.138909	1.485904
H52	1.203459	1.729738	0.034792	C131	1.588264	1.110424	1.534132
H53	1.043322	1.596033	0.518375	C132	1.650736	1.141884	1.552618
H54	1.097781	1.552398	0.752189	C133	1.677709	1.204262	1.545117
C55	0.855993	0.853453	0.98527	C134	1.645132	1.233083	1.498231
C56	0.913276	0.877825	0.873114	C135	1.322035	1.616053	0.874067

C57	0.951721	0.937525	0.888376	C136	1.380688	1.655256	0.96382
C58	0.931999	0.973896	1.013625	C137	1.404474	1.71724	0.968895
C59	0.874151	0.949939	1.112874	C138	1.36579	1.738147	0.886702
C60	0.835362	0.889285	1.095549	C139	1.307362	1.699303	0.79071
C61	0.950464	1.066983	1.178408	C140	1.210688	1.666106	0.332401
C62	0.891281	1.045095	1.236978	C141	1.178974	1.690919	0.195519
C63	0.741223	0.806588	1.136908	C142	1.118492	1.668221	0.261323
C64	0.76475	0.770511	1.088065	C143	1.091086	1.617023	0.458831
C65	0.985652	0.864751	0.625764	C144	1.122706	1.591396	0.593305
C66	1.026991	0.922708	0.684263	N145	0.970813	1.031844	1.040776
C67	0.859059	1.074174	1.327367	N146	0.852884	0.983868	1.220342
C68	0.997334	1.125777	1.232751	N147	0.778258	0.867753	1.170183
C69	0.680024	0.789682	1.120971	N148	0.822808	0.794477	0.984225
C70	0.737732	0.708057	1.139093	N149	0.928475	0.840734	0.741691
C71	1.090376	0.951035	0.654568	N150	1.008482	0.961191	0.79899
C72	0.993133	0.821046	0.46369	N151	0.741293	1.140611	1.553494
C73	1.125161	0.921212	0.687712	N152	1.096176	1.313523	1.11557
C74	1.185818	0.954374	0.748843	N153	1.277375	1.049069	0.85679
C75	1.216523	1.017056	0.769818	N154	1.039295	0.689502	0.244752
C76	1.18403	1.046326	0.708914	N155	0.660977	0.520532	1.306508
C77	1.123856	1.01519	0.647235	N156	0.504495	0.749964	0.878585
C78	0.952786	0.758532	0.525276	N157	1.221284	1.595329	0.68977
C79	0.968133	0.716614	0.440643	N158	1.549495	1.231434	1.381753

Table S4. Fractional atomic coordinates for the unit cell of **HAT-NTBCA-COF** with AA stacking.

P1							
a = b = 33.03 Å, c = 4.20 Å, α = β = 90º, and γ = 120º							
H1	1.283804	0.80217	0.49772	C110	1.00379	0.550664	0.859411
H2	1.366222	0.855602	0.59533	C111	1.018568	0.59757	0.854573
H3	1.333273	0.950962	1.08476	C112	0.910837	0.691472	1.151225
H4	1.250988	0.898749	1.00005	C113	0.864895	0.678166	1.09369
H5	1.145798	0.673986	0.56397	C114	0.835277	0.636562	0.930156
H6	1.169514	0.617104	0.67101	C115	0.853438	0.608233	0.833162
H7	1.295552	0.722921	1.1331	C116	0.899108	0.62043	0.889641
H8	1.272798	0.78064	1.03902	C117	1.050235	0.937052	1.006499
H9	0.93156	0.594807	1.32488	C118	1.017909	0.951447	1.025114
H10	0.90641	0.512067	1.32081	C119	0.97279	0.921888	1.142202
H11	1.024436	0.538574	0.72704	C120	0.960557	0.876737	1.243509
H12	1.050336	0.621022	0.71853	C121	0.992186	0.861392	1.229756
H13	0.933357	0.725604	1.2653	C122	1.194506	0.965985	0.960887
H14	0.852115	0.701362	1.17545	C123	1.228256	1.010824	1.032795
H15	0.830797	0.575665	0.70322	C124	1.218969	1.038537	1.239875
H16	0.911162	0.598126	0.78183	C125	1.174101	1.01913	1.373411
H17	1.083809	0.961	0.89385	C126	1.139611	0.974212	1.306572
H18	1.027507	0.986701	0.94127	C127	0.897512	0.915232	1.083189
H19	0.925317	0.853107	1.33674	C128	1.295095	1.108539	1.212068
H20	0.98122	0.82556	1.30894	C129	1.424037	0.980293	0.952311
H21	1.203632	0.945523	0.79869	C130	1.228354	0.589509	0.915845
H22	1.262695	1.024449	0.9206	C131	0.960751	0.447414	0.857778
H23	1.166401	1.040169	1.53933	C132	0.763897	0.640746	0.94007
H24	1.106282	0.960122	1.43357	C133	1.320648	1.158293	1.272266
H25	0.879347	0.878771	0.99941	C134	1.469301	1.004612	1.104759
H26	1.311907	1.094003	1.06042	C135	1.485661	0.981897	1.306888

H27	1.408635	1.001322	0.87073	C136	1.529487	1.005388	1.440809
H28	1.194708	0.570617	0.79003	C137	1.561586	1.052247	1.354972
H29	0.995588	0.463773	0.74717	C138	1.543252	1.076444	1.177342
H30	0.776993	0.672007	1.09161	C139	1.498838	1.052666	1.051381
H31	1.463539	0.944643	1.36387	C140	1.363923	1.18665	1.122748
H32	1.5416	0.985334	1.58092	C141	1.387948	1.234366	1.161122
H33	1.566827	1.112234	1.093	C142	1.368817	1.257071	1.347353
H34	1.487558	1.071771	0.89414	C143	1.326661	1.227783	1.514937
H35	1.378571	1.171169	0.9602	C144	1.303295	1.180214	1.473467
H36	1.419394	1.255403	1.0165	C145	1.3857	1.306158	1.314681
H37	1.310679	1.243435	1.66364	C146	1.610825	1.068075	1.347765
H38	1.27007	1.159599	1.60104	C147	1.626456	1.035935	1.277867
H39	1.601574	0.998136	1.28222	C148	1.670337	1.05053	1.154929
H40	1.678625	1.023147	1.09357	C149	1.70282	1.098232	1.105839
H41	1.713462	1.168095	1.19126	C150	1.688773	1.130276	1.200433
H42	1.635024	1.142628	1.37205	C151	1.644753	1.115958	1.320861
H43	1.459311	1.327331	1.26401	C152	1.433231	1.338659	1.249138
H44	1.485164	1.407249	1.11948	C153	1.447421	1.383717	1.15176
H45	1.341587	1.378523	1.17986	C154	1.415528	1.399877	1.110518
H46	1.316689	1.300087	1.33987	C155	1.368583	1.368395	1.193139
H47	1.844595	1.157714	0.90677	C156	1.354184	1.323614	1.296274
H48	1.895301	1.237024	0.74289	C157	1.474844	1.478666	0.871994
H49	1.774765	1.252881	0.55239	C158	1.396465	1.462159	1.034705
H50	1.723532	1.172669	0.71372	C159	1.766264	1.081747	1.008365
H51	1.721991	1.033689	0.64278	C160	1.779103	1.158906	0.849654
H52	1.752953	0.980653	0.69967	C161	1.827992	1.177875	0.832344
H53	1.847557	1.071824	1.43943	C162	1.85736	1.222584	0.720532
H54	1.814749	1.1224	1.38134	C163	1.839674	1.252549	0.635933
H55	1.487158	1.425847	0.65767	C164	1.790431	1.231544	0.619511
H56	1.566699	1.478786	0.50234	C165	1.761444	1.186648	0.727742

H57	1.551895	1.595681	0.82724	C166	1.74917	1.041094	0.822486
H58	1.474714	1.543159	0.9989	C167	1.76665	1.011168	0.858008
H59	1.433644	1.510811	1.41678	C168	1.80338	1.02092	1.075354
H60	1.379559	1.539806	1.45954	C169	1.820008	1.062157	1.260356
H61	1.293647	1.442429	0.7153	C170	1.801613	1.09117	1.23004
H62	1.350205	1.416094	0.6688	C171	1.501787	1.463271	0.707739
H63	1.350357	1.578418	1.35428	C172	1.546514	1.494037	0.601302
H64	1.308665	1.619063	1.26965	C173	1.568226	1.542707	0.66333
H65	1.202723	1.501657	0.73059	C174	1.538425	1.558313	0.782357
H66	1.2435	1.459342	0.81752	C175	1.494039	1.527513	0.89242
H67	1.92945	1.306808	0.41499	C176	1.40307	1.496547	1.25761
H68	1.981017	1.389487	0.52901	C177	1.371729	1.512328	1.282992
H69	1.868997	1.393159	1.0465	C178	1.330947	1.49407	1.091537
H70	1.81741	1.31132	0.93407	C179	1.323625	1.4576	0.87867
H71	1.770069	0.931217	0.84352	C180	1.355878	1.442967	0.846542
H72	1.811122	0.887864	0.83949	C181	1.301448	1.514826	1.090665
H73	1.926072	1.000046	1.36035	C182	1.618538	1.572047	0.681253
H74	1.887466	1.044265	1.35626	C183	1.868524	1.302202	0.655541
H75	1.6354	1.527304	0.39071	C184	1.824741	0.99218	1.098265
H76	1.716852	1.565986	0.52685	C185	1.317242	1.559983	1.223054
H77	1.699937	1.663319	1.12811	C186	1.293772	1.583754	1.168731
H78	1.618266	1.624421	1.00429	C187	1.252416	1.564189	0.987754
C79	1.070894	0.734739	0.88545	C188	1.234944	1.51847	0.873071
C80	1.117769	0.760326	0.82325	C189	1.25808	1.494199	0.924818
C81	1.140134	0.807366	0.84733	C190	1.915882	1.326079	0.549075
C82	1.115711	0.829349	0.92116	C191	1.944926	1.372535	0.618152
C83	1.069424	0.804289	0.98842	C192	1.929334	1.398355	0.794251
C84	1.046913	0.756445	0.97348	C193	1.882743	1.37493	0.902492
C85	1.116443	0.897558	1.04023	C194	1.852859	1.328823	0.833028
C86	1.069245	0.873125	1.07349	C195	1.804349	0.946777	0.960391

C87	0.979999	0.684685	1.02215	C196	1.827663	0.922069	0.958481
C88	1.005457	0.663274	0.97372	C197	1.872199	0.94033	1.095902
C89	1.188646	0.763591	0.76238	C198	1.891714	0.984328	1.24376
C90	1.210873	0.811135	0.76296	C199	1.869121	1.009503	1.246302
C91	1.038764	0.891008	1.11011	C200	1.649038	1.557771	0.549395
C92	1.148385	0.945327	1.09559	C201	1.695488	1.57958	0.631066
C93	0.930786	0.664229	1.03833	C202	1.715503	1.617976	0.840974
C94	0.991679	0.615601	1.00441	C203	1.686228	1.633876	0.959988
C95	1.258937	0.844072	0.75024	C204	1.639658	1.612301	0.882188
C96	1.207837	0.733764	0.77735	N205	1.139794	0.87519	0.945626
C97	1.293792	0.834786	0.62492	N206	1.045364	0.824904	1.066592
C98	1.340527	0.864935	0.682	N207	1.001833	0.732661	1.041092
C99	1.355815	0.906775	0.85136	N208	1.051509	0.688853	0.884179
C100	1.322479	0.918457	0.95176	N209	1.140731	0.737887	0.768679
C101	1.275727	0.889033	0.89865	N210	1.185718	0.833353	0.812558
C102	1.179788	0.685814	0.68056	N211	0.941415	0.938308	1.154221
C103	1.192886	0.653318	0.74714	N212	1.2525	1.084668	1.314457
C104	1.23463	0.665794	0.90987	N213	1.402978	0.935169	0.930516
C105	1.263013	0.712564	1.00159	N214	1.248878	0.63355	0.985141
C106	1.251002	0.745921	0.93539	N215	0.944389	0.470443	1.006891
C107	0.951916	0.583084	1.18653	N216	0.788738	0.622283	0.855627
C108	0.938067	0.53635	1.18801	N217	1.429495	1.446567	1.002625
C109	0.962704	0.518846	1.01944	N218	1.748583	1.112991	0.977714