

*Electronic Supplementary Information for*

**Noncovalent and covalent double assembly: Unravelling a unified mechanism for the tubular shape evolution of microporous organic polymers**

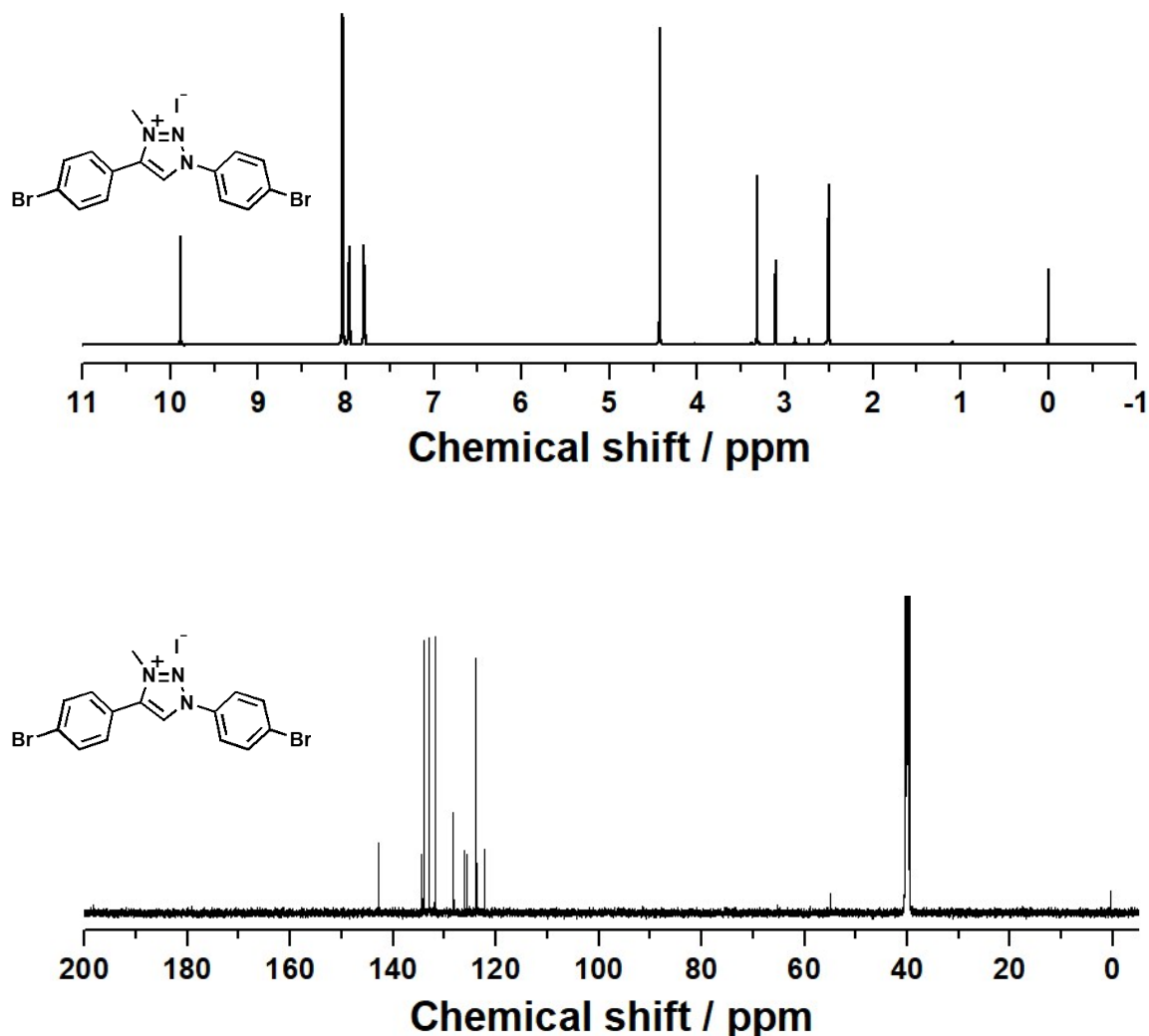
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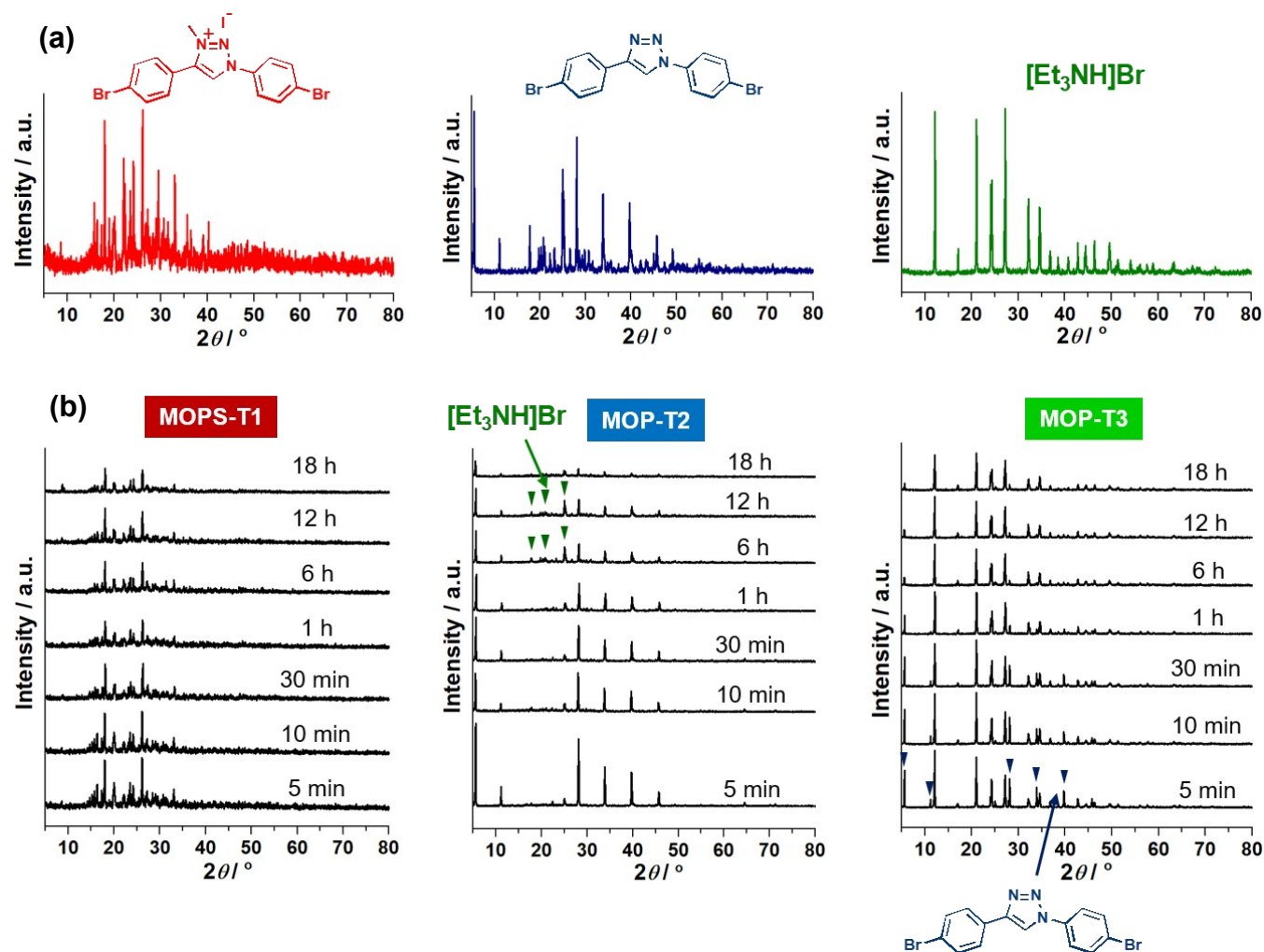
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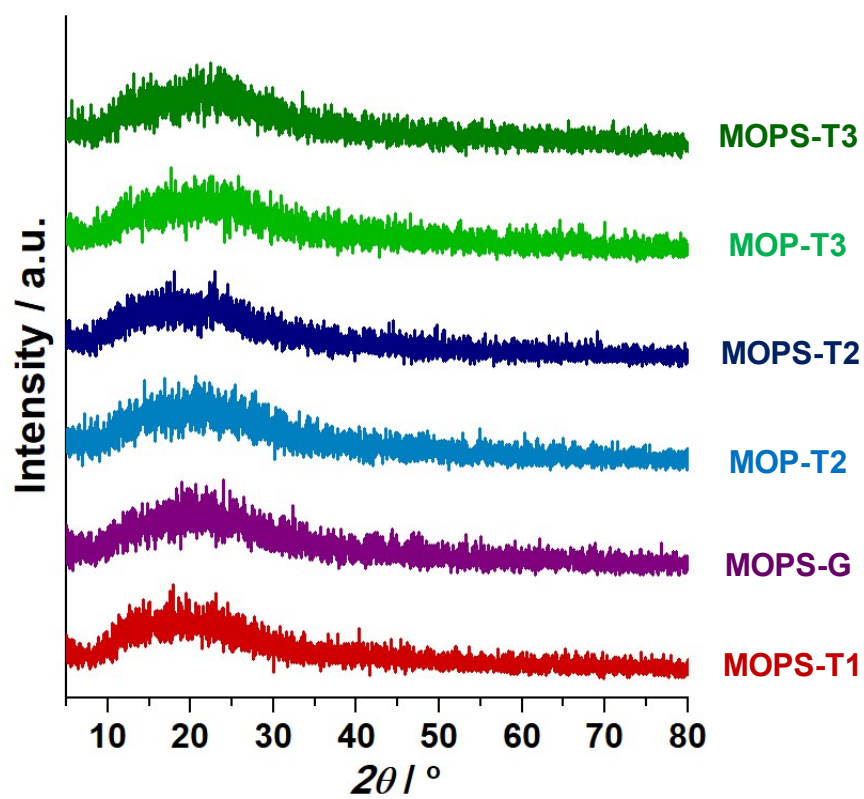
**Fig. S1** <sup>1</sup>H and <sup>13</sup>C NMR spectra of a new compound, 1,4-di(4-bromophenyl)-3-methyl-1,2,3-triazolium iodide.



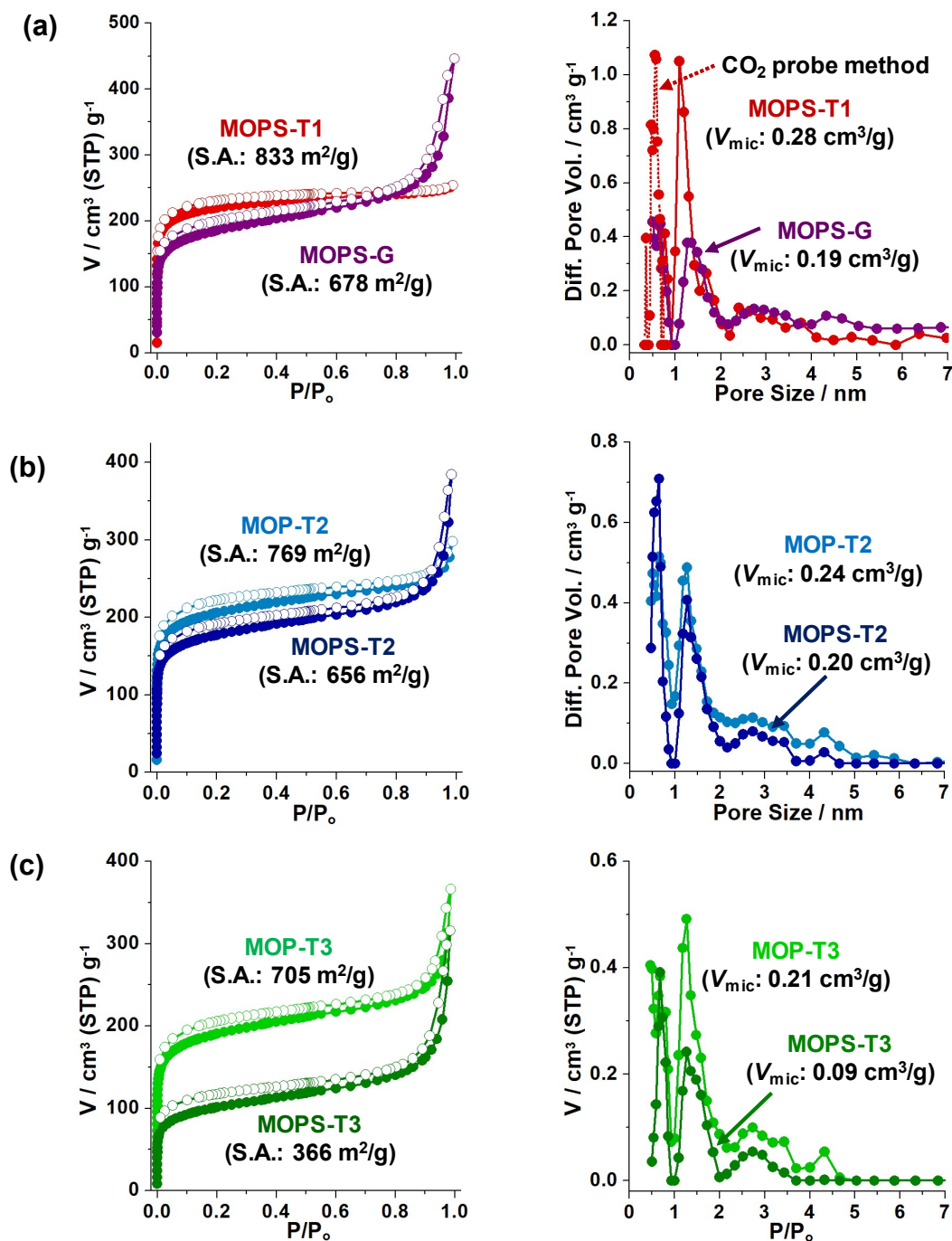
**Fig. S2** PXRD patterns of powders of (a) 1,4-di(4-bromophenyl)-3-methyl-1,2,3-triazolium iodide, 1,4-di(4-bromophenyl)-1,2,3-triazole, and triethylammonium bromide and (b) mixtures of solids retrieved via centrifugation during the synthetic processes for MOPS-T1, MOP-T2 and MOP-T3.



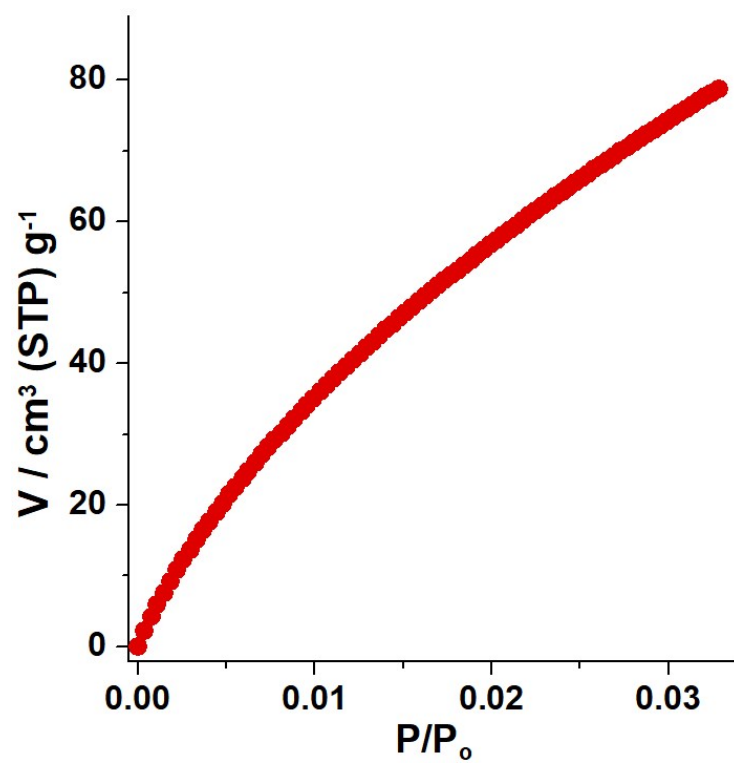
**Fig. S3** PXRD patterns of MOPS-T1, MOPS-G, MOP-T2, MOPS-T2, MOP-T3, and MOPS-T3.



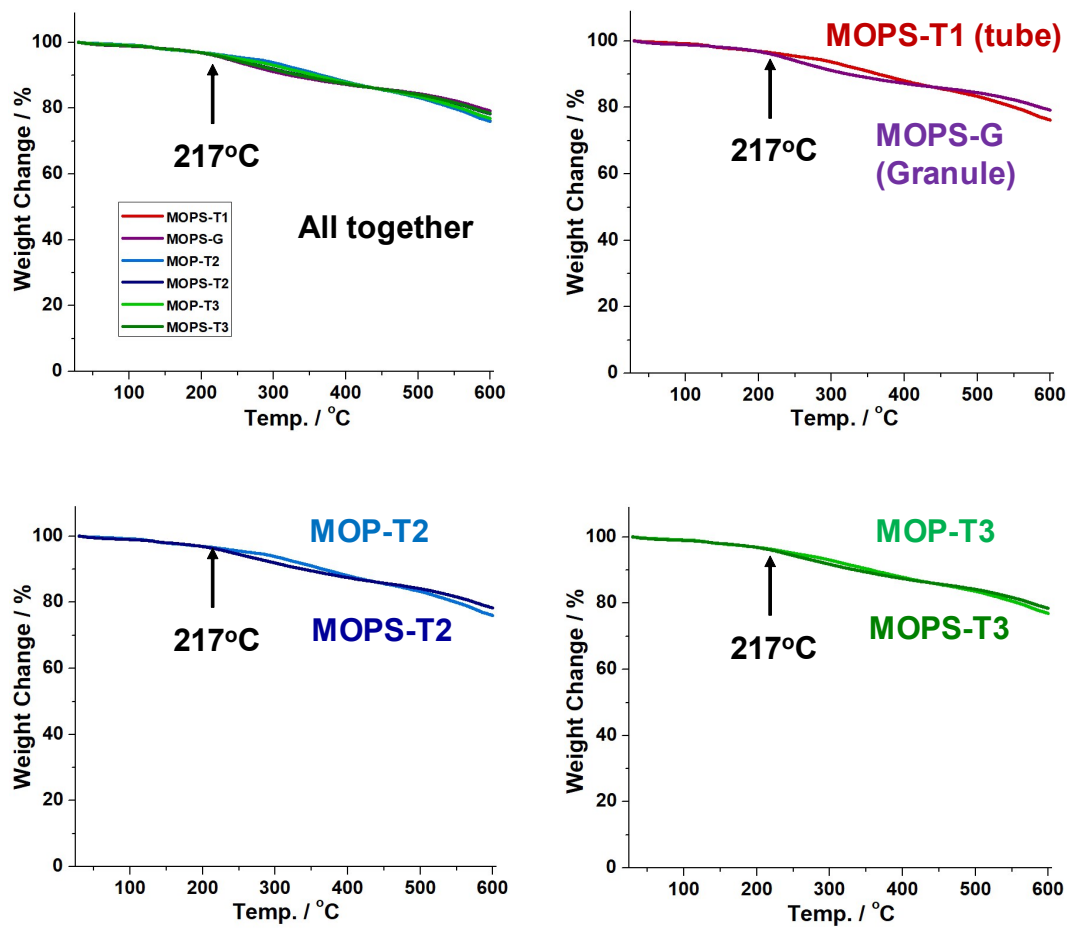
**Fig. S4** N<sub>2</sub> adsorption-desorption isotherm curves and pore size distribution diagrams (based on the DFT method) of (a) MOPS-T1 and MOPS-G, (b) MOP-T2 and MOPS-T2, and (c) MOP-T3 and MOPS-T3.



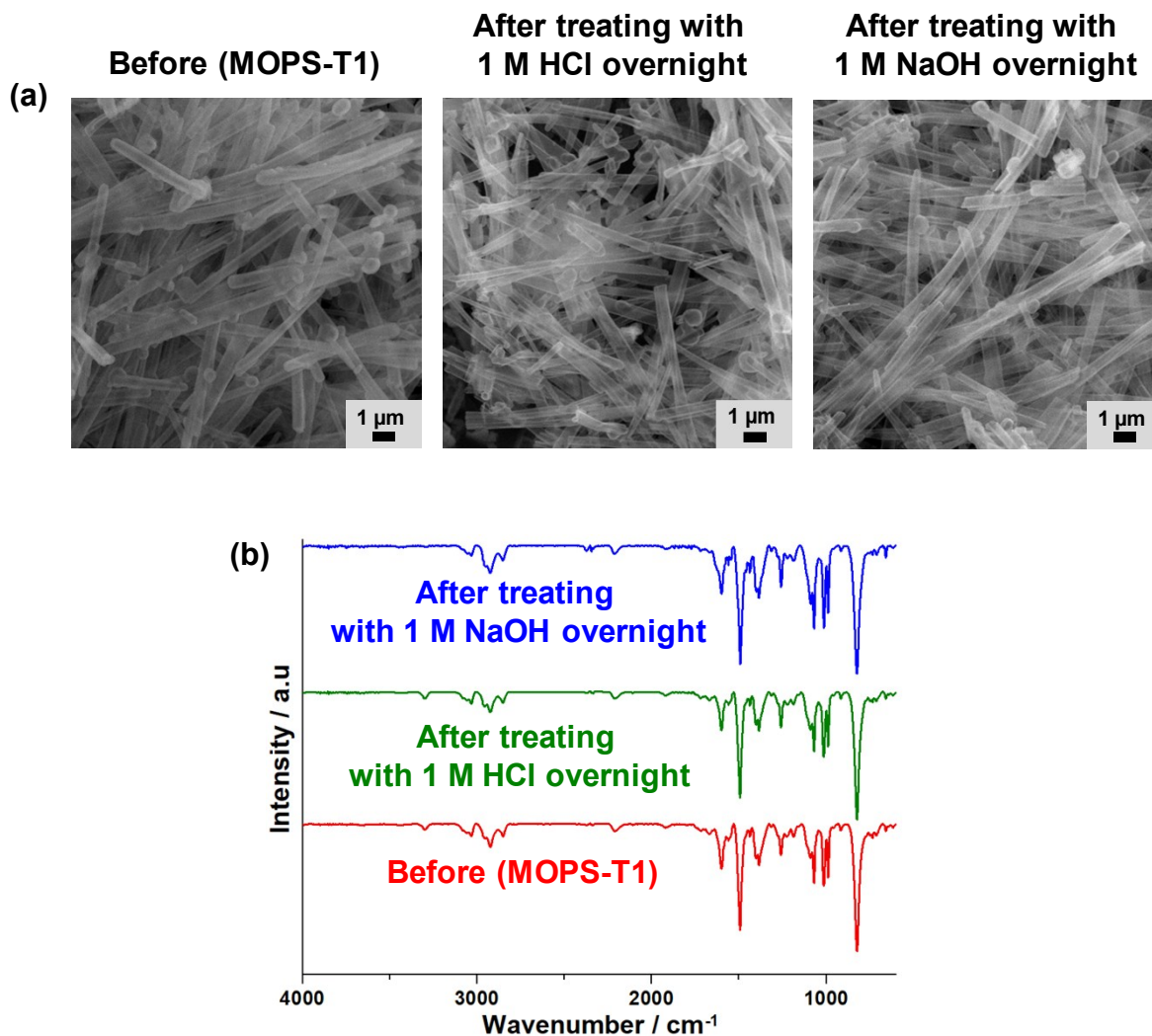
**Fig. S5** CO<sub>2</sub> adsorption isotherm curve of MPOS-T1 at 273 K.



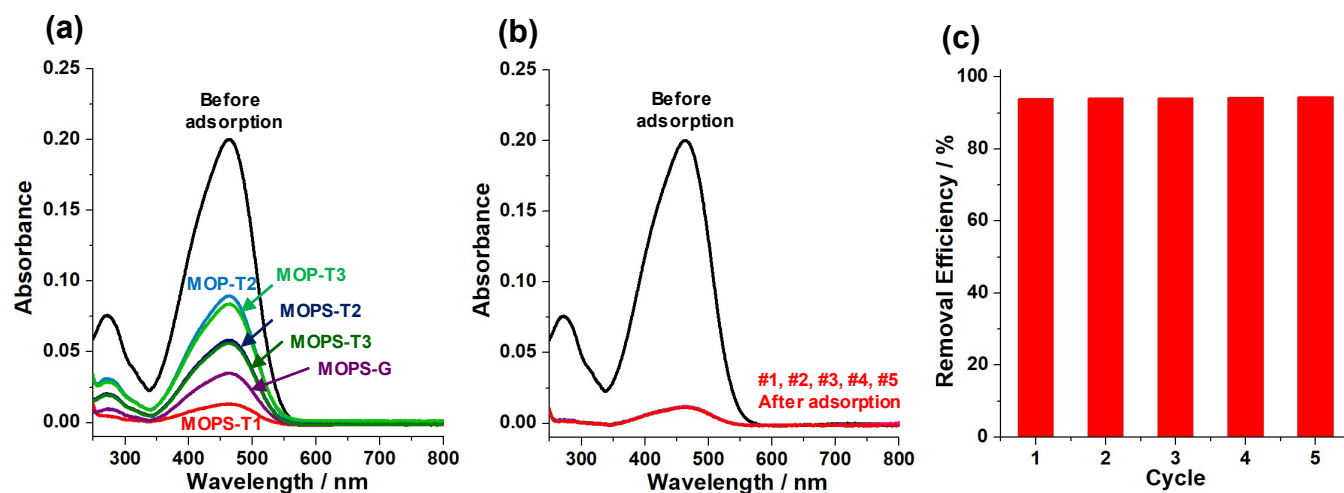
**Fig. S6** TGA curves of MOPS-T1, MOPS-G, MOP-T2, MOPS-T2, MOP-T3, and MOPS-T3.



**Fig. S7** Chemical stability of MOPS-T1 in the acidic and basic conditions. (a) SEM images and (b) IR absorption spectra of MOPS-T1 before and after treating with 1 M HCl or 1 M NaOH at room temperature overnight.



**Fig. S8** Adsorption performance of MOP materials: (a) UV-vis absorption spectra of methyl orange solutions before (initial concentration: 9.6  $\mu\text{M}$ ) and after adsorption by MOP materials (10 mg), (b) UV-vis absorption spectra of methyl orange solutions before (initial concentration: 9.6  $\mu\text{M}$ ) and after five successive adsorption tests by MOPS-T1 (10 mg), and (c) removal efficiencies of MOPS-T1 (10 mg) for five successive adsorption of methyl orange solution (initial concentration: 9.6  $\mu\text{M}$ ).





**Fig. S9** (a) Time dependent adsorption of methyl orange solution (initial concentration: 12.5 ppm) by MOPS-T1 (10 mg) and (b) the Langmuir plot of methyl orange adsorption (the range of initial concentration of methyl orange: 100 ~500 ppm) by MOPS-T1 (10 mg).

