Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Conjugated microporous polymers as an ideal platform for tunable emission *via* π-conjugation

Yuwei Zhang,[a1] Zhangfu Chen,[b1] Qikun Sun,[c1] Wei Shi,[b] Qianyu Liu,[a] Jieqiong Wan,[bd*] and Zhongping Li*[c]

[a] Laboratory of Preparation and Applications of Environmental Friendly Materials (Jilin Normal University), Ministry of Education, Changchun, 130103, China.

[b] Department of Materials Science and Engineering, Yonsei University, Seoul 03722, South Korea.

[c] School of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology, 50 UNIST, Ulsan, 44919 South Korea.

[d] College of Chemistry and Chemical Engineering, Shanghai University of Engineering Science, Shanghai, 201620, China.

Characterizations:

The infrared spectra were recorded from 500 to 4000 cm^{-1} on an Avatar FT-IR 360 spectrometer by using KBr pellets. Elemental analyses were measured by an Elemental model vario EL cube analyzer. Field emission scanning electron microscopy was recorded on a SU8020 model HITACHI microscope. Powder X-ray diffraction data were performed on a PAN analytical BV Empyrean diffractometer by depositing powder on glass substrate, from 2θ = 4.0° to 35° with 0.02°. Thermogravimetric analysis (TGA) was performed on a TA Q500 thermogravimeter with the heating at a rate of 10 °C min^{-1} from room temperature to 700 °C under nitrogen. Nitrogen sorption isotherms were measured at 77 K with a JW-BK 132F analyzer. The absolute fluorescence quantum yields were measured on Edinburgh FLS920 by using an integrating sphere. Photoluminescence spectra were recorded on a Cary Eclipse Fluorescence Spectrophotometer. Frontier molecular orbital (FMO) plots of HCMPs at the level of B3LYP/6-31G (d,p).

Preparations :

4,4',4'',4'''-(pyrene-1,3,6,8-tetrayl)tetrabenzaldehyde (30 mg, 0.049 mmol) and pyromellitic-N,N′ bisaminoimide (24 mg, 0.097 mmol) were added into o-DCB (1.2 mL), n-BuOH (0.4 mL), and acetic acid 6 M 0.1 mL were added into the system. The tube was then flash frozen at 77 K and degassed by three freeze-pump-thaw cycles. The mixture was stirred heated about 100 °C under the nitrogen atmosphere for three days. After cooling down to room temperature, the sample was Soxhleted by THF for one day and dried in vacuum at 80 °C for more than 12 h to give a yellow powder (HCMP-1, Yield:83%). The same procedure was for HCMP-2 (Yield:81%)

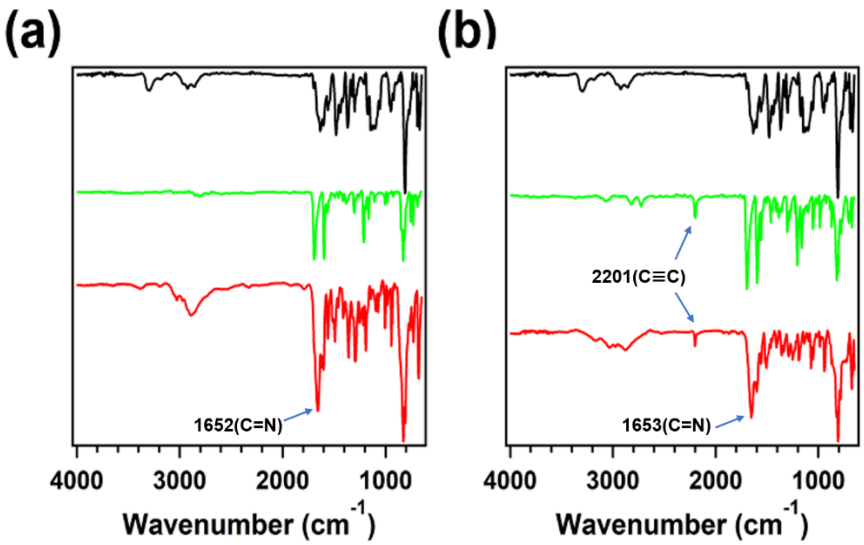

Fig. S1. FT IR spectra of (a) HCMP-1 (red curve), building unit-a (green curve), and building unit-c (black curve); (b) HCMP-2 (red curve), building unit-b (green curve), and building unit-c (black curve).

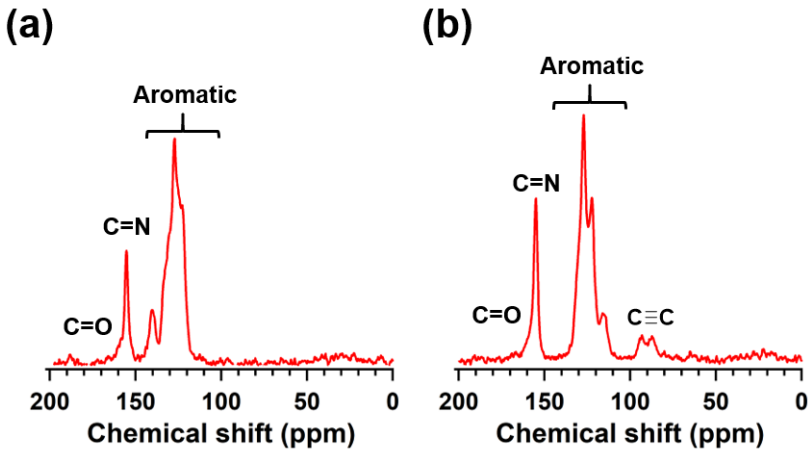

Fig. S2. The ^{13}C CP-MAS NMR spectra of (a) HCMP-1 and (b) HCMP-2.

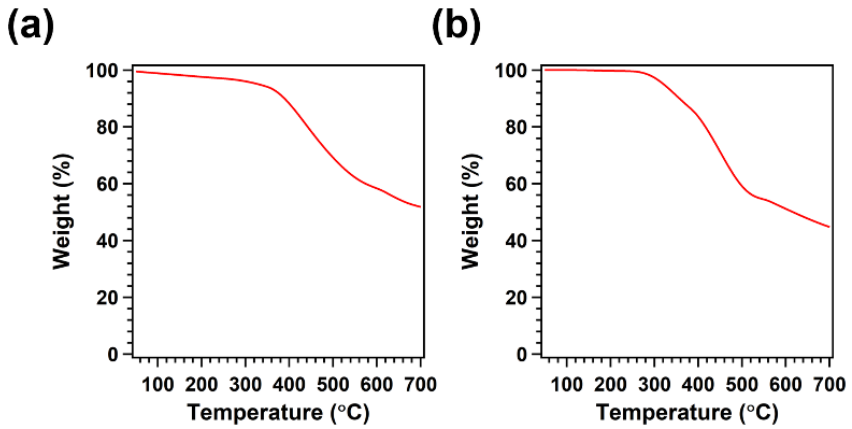

Fig.S3. TGA curves of (a) HCMP-1 and (b) HCMP-2 under the nitrogen atmosphere.

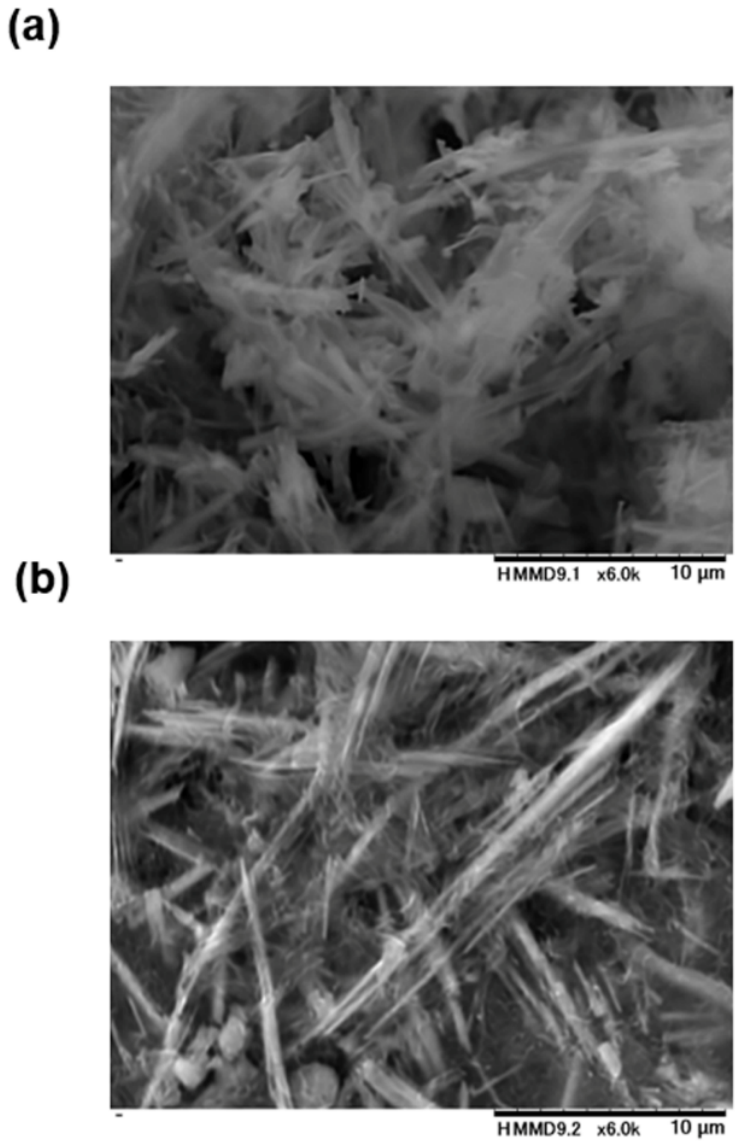

Fig. S4. FE SEM images of (a) HCMP-1 and (b) HCMP-2.

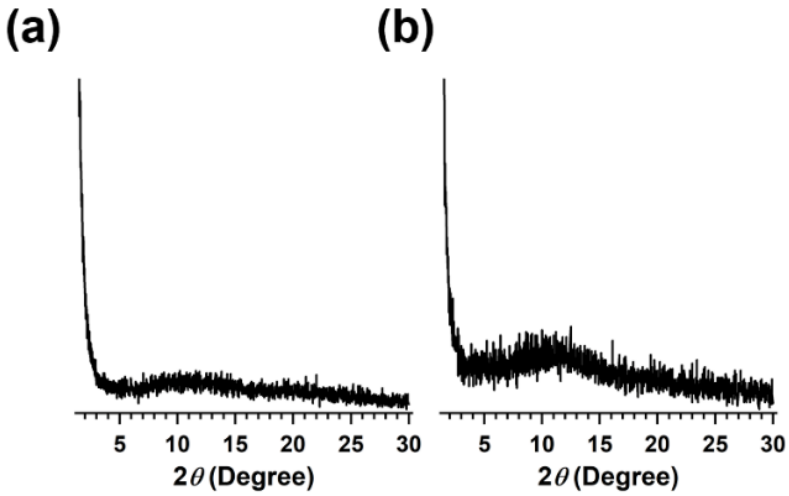

Fig. S5. PXRD patterns of (a) HCMP-1 and (b) HCMP-2.

Tab.S1. Elemental analysis of HCMP-1 and HCMP-2.

		C (%)	N (%)	H (%)
HCMP-1	theoretical	73.99	10.79	2.91
	observed	74.03	9.71	3.15
HCMP-2	theoretical	76.19	9.87	2.66
	observed	77.20	8.65	3.37