Journal Name

ARTICLE

Electronic Supporting Information (ESI)

Nitrogen-doped porous carbon nanosheets derived from poly(ionic liquid): Hierarchical pore structures for efficient CO_2 capture and dye removal

Jiang Gong, Huijuan Lin, Markus Antonietti and Jiayin Yuan*

Table S1 The surface element compositions of C-PIL and NPCNSs.

Sample	C (at %)	O (at %)	N (at %)	Pyridinic N (%)	Pyrrolic N (%)	Graphitic N (%)	Oxidized N (%)
C-PIL	74.9	17.3	7.8	43.9	12.4	26.4	7.3
NPCNS-1	77.6	14.5	8.2	51.7	12.6	31.3	4.4
NPCNS-5	79.2	10.8	10.0	50.6	17.7	27.7	4.0
NPCNS-10	76.1	9.7	14.2	49.9	17.8	29.8	2.5

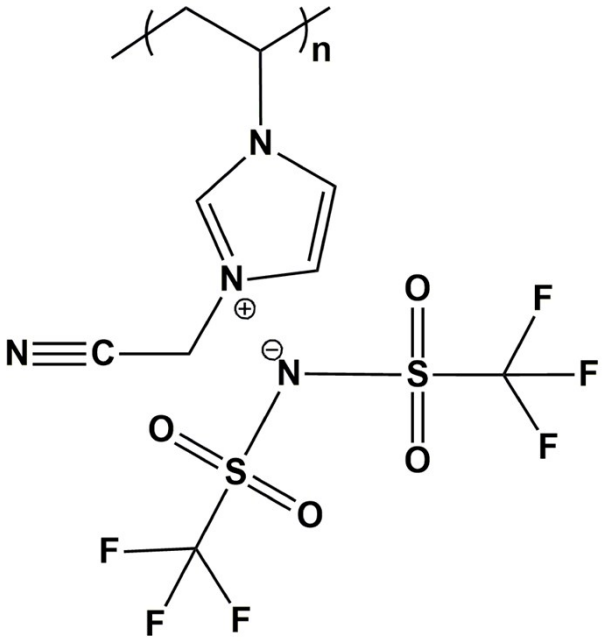

Fig. S1 Chemical structure of PIL applied as carbon precursor for the preparation of NPCNSs.

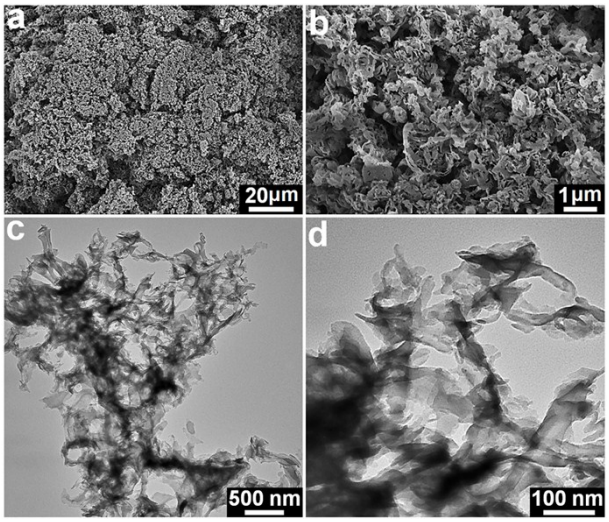

Fig. S2 SEM (a and b) and TEM (c and d) images of the as-synthesized C_3N_4 nanosheets.

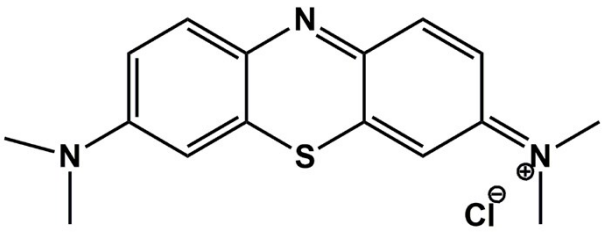

Fig. S3 Chemical structure of MB as the model dye compound in this work.

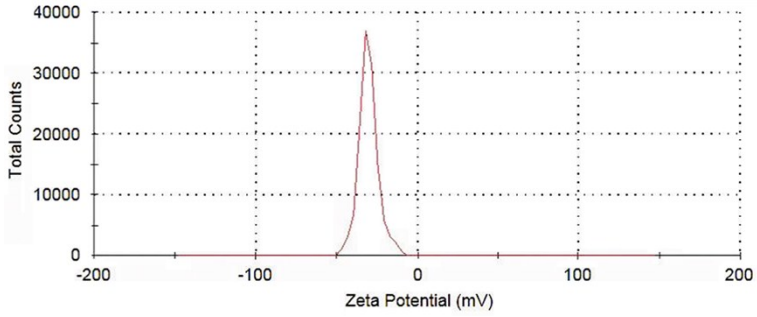

Fig. S4 Zeta potential of C_3N_4 nanosheets dispersion.

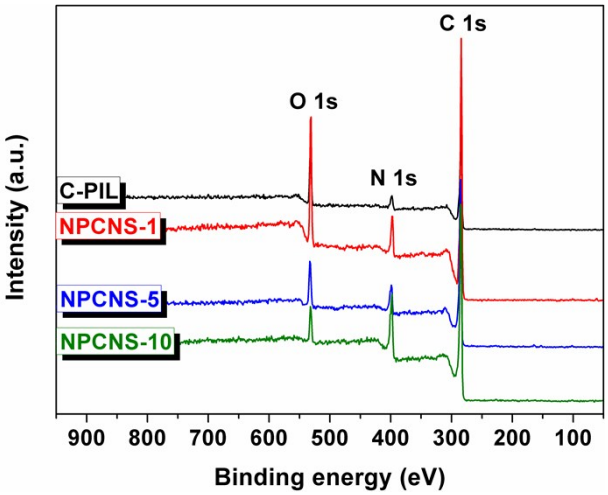

Fig. S5 XPS spectra of C-PIL and NPCNSs.

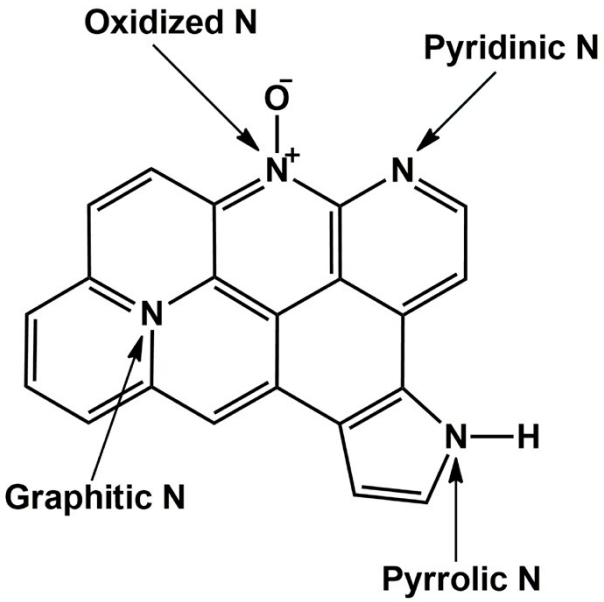

Fig. S6 Scheme of nitrogen element with different states on the surface of C-PIL and NPCNSs.

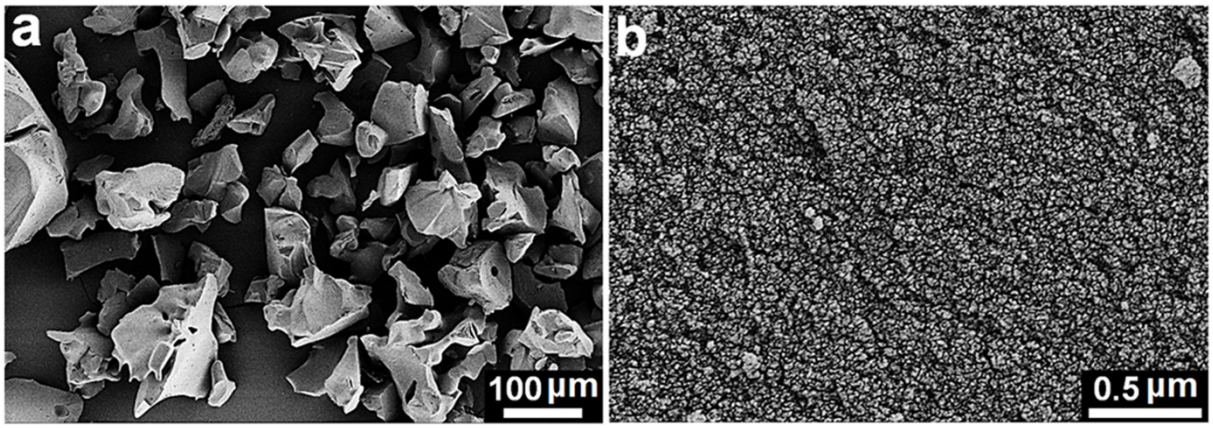

Fig. S7 SEM images with low (a) and high (b) magnifications of C-PIL prepared from PIL in the absence of C_3N_4 templates.

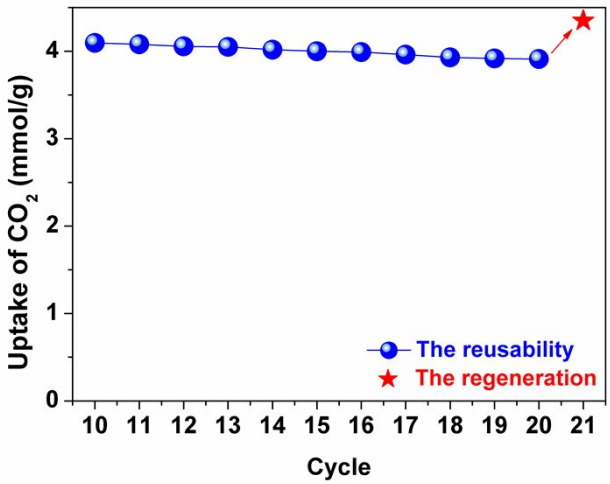

Fig. S8 The reusability up to 20 cycles and the regeneration (by degassing 200 °C for 24 h) of NPCNS-10 for CO_2 uptake at 273 K.

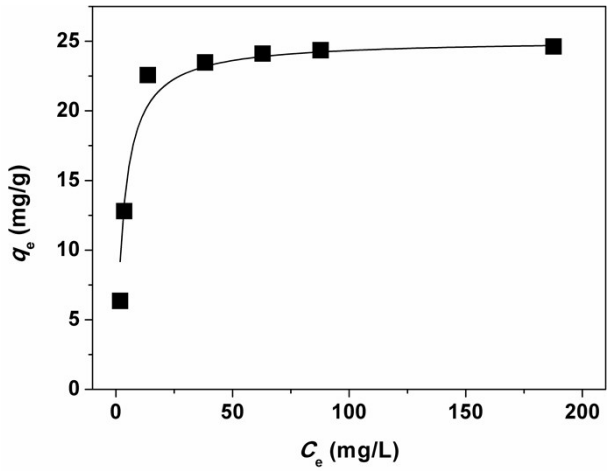

Fig. S9 Equilibrium adsorption isotherm of MB on the as-synthesized C_3N_4 (experimental conditions: C_0 = 5–200 mg/L, and C_3N_4 concentration = 0.5 g/L).

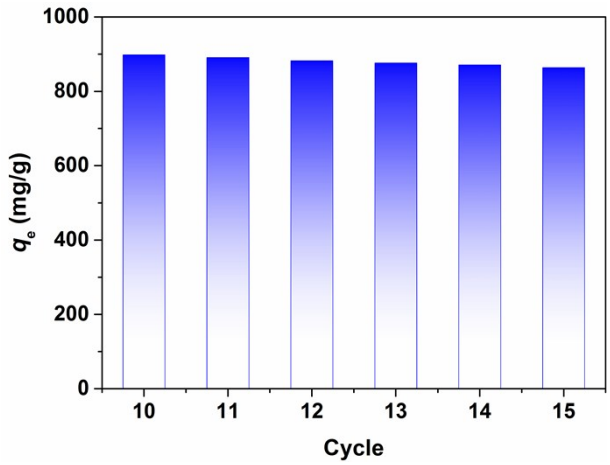

Fig. S10 The reusability of NPCNS-10 for MB adsorption up to 15 cycles.