Supporting Information

Nitrogen Decorated, Porous Carbons Derived from Waste Cow Manure as Efficient Catalysts for Selective Capture and Conversion of CO_2

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Table S1 Textural properties and N contents and of CMCs.

Samples	S_{BET} (m^2/g)[a]	V_m (cm^3/g)[b]	V_t (cm^3/g)[c]	W_N (*wt.*%)[d]
CMC	60	0.02	0.05	0.74
CMC-A-1[e]	713	0.19	0.56	0.37
CMC-A-2[f]	1106	0.29	0.93	0.39
CMC-A-2[g]	1086	0.32	1.12	0.38

[a] Specific surface area; [b] Micropore volume; [c] Total pore volume; [d] N contents. [e] KOH activation method was widely used to increase porosity[S1]. [f] $NaNH_2$ activation method was widely used to increase porosity[S2,S3]. [g] Textural properties of CMC-A-2 after 5 recycled times.

Table S2 CO_2 capacities and CO_2/N_2 selectivities of CMCs.

Samples	CO_2 capacities (mmol/g) [a]		CO_2/N_2 selectivities [b]	
	0 °C	23 °C	0 °C	23 °C
CMC	0.50	0.41	14.9	21.1
CMC-A-1	0.88	0.63	23.7	27.5
CMC-A-2	1.44	0.73	51.0	41.4

[a] CO_2 capacities at 0.15 bar; [b] IAST selectivities for a mixture of CO_2 and N_2 (0.15:0.85 v/v) at 1 bar.

Table S3 Activity of catalysts in the cycloaddition of CO_2 to propylene oxide for the production of propylene carbonate.

Catalysts	CO_2 (MPa)	Co-catalysts	Temp. (°C)	Time (h)	Yield (%)	Refs
USTC-253-TFA	0.1	*n*-Bu_4NBr	25	72	81.3	S4
Co-CMP 100	0.1	*n*-Bu_4NBr	25	48	81.5	S5
Zn/HAzo-POP-1	3.0	*n*-Bu_4NBr	100	0.5	86.0	S6
Silicon-based poly-imidazolium salts	1.0	-	110	2	94.0	S7
Chitosan functionalized ionic liquid CS-EMImBr	2.0	-	120	4	96.0	S8
Co@R/HMTA-0.30	1.0	*n*-Bu_4NBr	100	1.5	97.1	S9
TBB-Bpy@Salen-Co	1.0	-	60	6	99.2	S10
Co/POP-TPP	0.1	n-Bu4NBr	29	24	98.5	S11

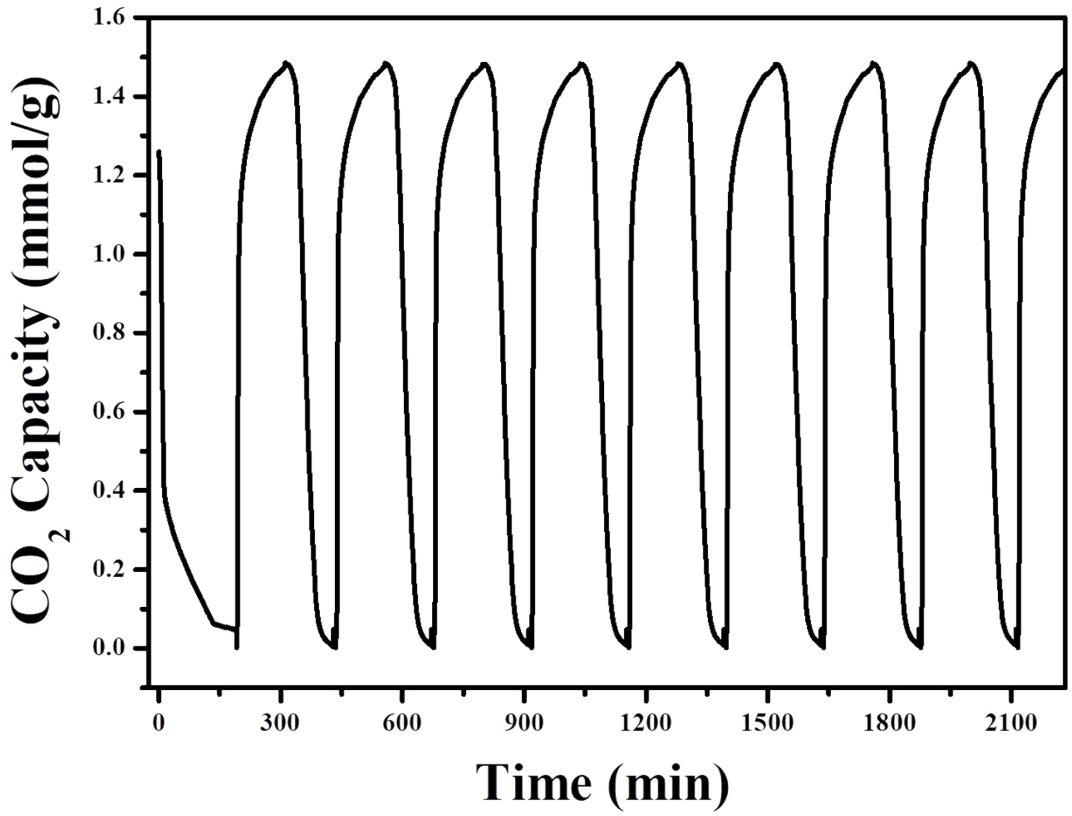

Figure S1 Cycling property of CMC-A-2 in the capture of CO_2 under dry condition (adsorption conditions: pure CO_2, 23 °C, 50 mL/min, 180 min; desorption conditions: pure N_2, 75 °C, 150 mL/min, 120 min).

Supporting references

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