Supplementary Material

Biomass Based N/O Codoped Porous Carbons with Abundant Ultramicropores for Highly Selective CO_2 Adsorption

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To calculate CO_2/N_2 selectivity based on Henry's law, the adsorption isotherms of CO_2 and N_2 were fitted according to a simplified virial equation:

$$\ln p = \ln q + \frac{1}{T}\mathrm{a}_0 + \mathrm{b}_0 \qquad \text{(S1)}$$

Where p is pressure (Pa), T is temperature (K), q is the amount of the adsorbed gas (mmol g^{-1}), a_0 and b_0 are the virial coefficients. Then the Henry's constant (K_H) can be obtained based on equation (S2):

$$\mathrm{K_H} = \exp\left(-\frac{\mathrm{a}_0}{T}\right)\exp(\mathrm{b}_0) \qquad \text{(S2)}$$

Finally, the CO_2/N_2 selectivity by Henry's law can be calculated *via* exploiting the following equation (S3):

$$\mathrm{S_{CO_2/N_2}} = \mathrm{K_{H,CO_2}}/\mathrm{K_{H,N_2}} \qquad \text{(S3)}$$

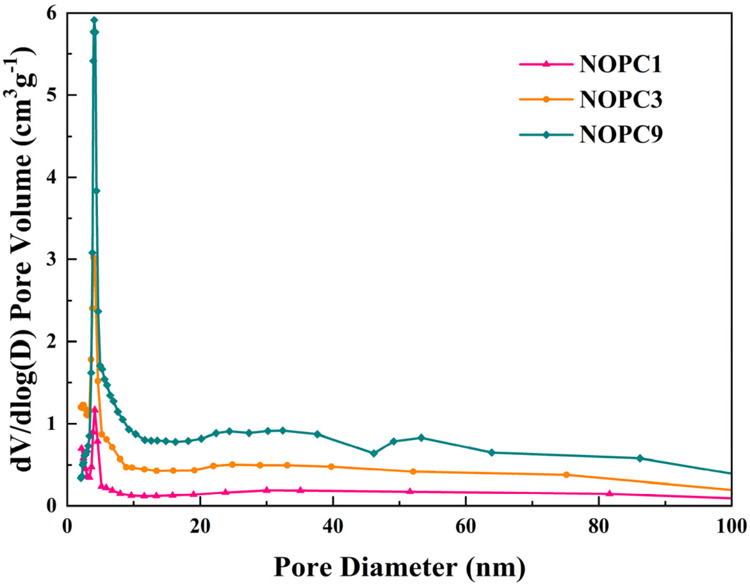

Figure S1. Pore size distribution curves of NOPC1, NOPC3 and NOPC9.

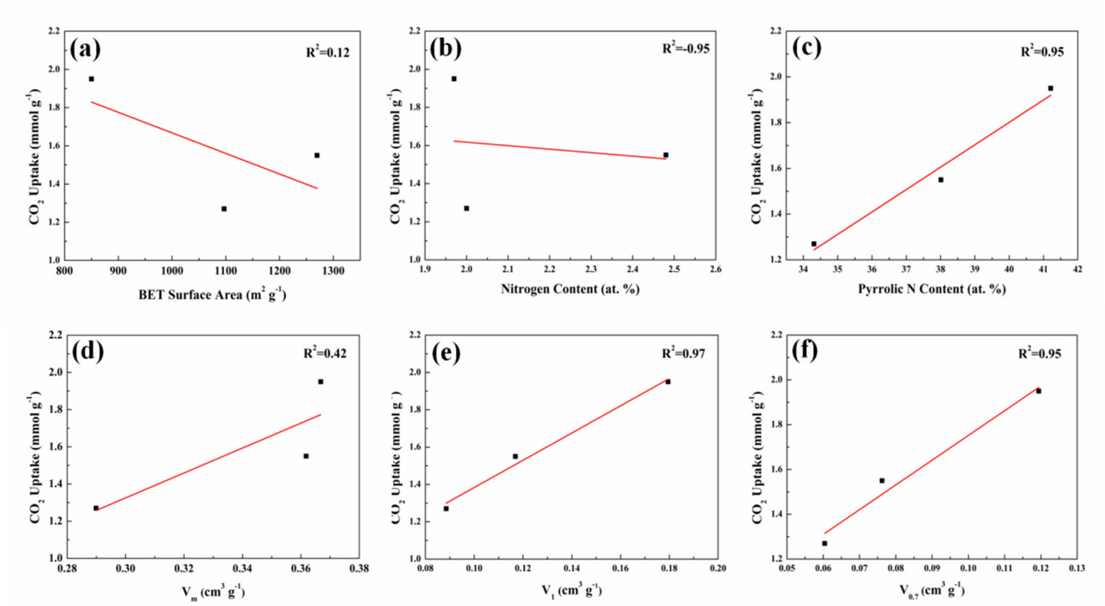

Figure S2. The linear fitting of CO_2 uptake (298 K, 1bar) against (a) BET surface area, (b) Nitrogen content, (c) Pyrrolic N content, (d) V_m, (e) V_1 and (f) $V_{0.7}$.

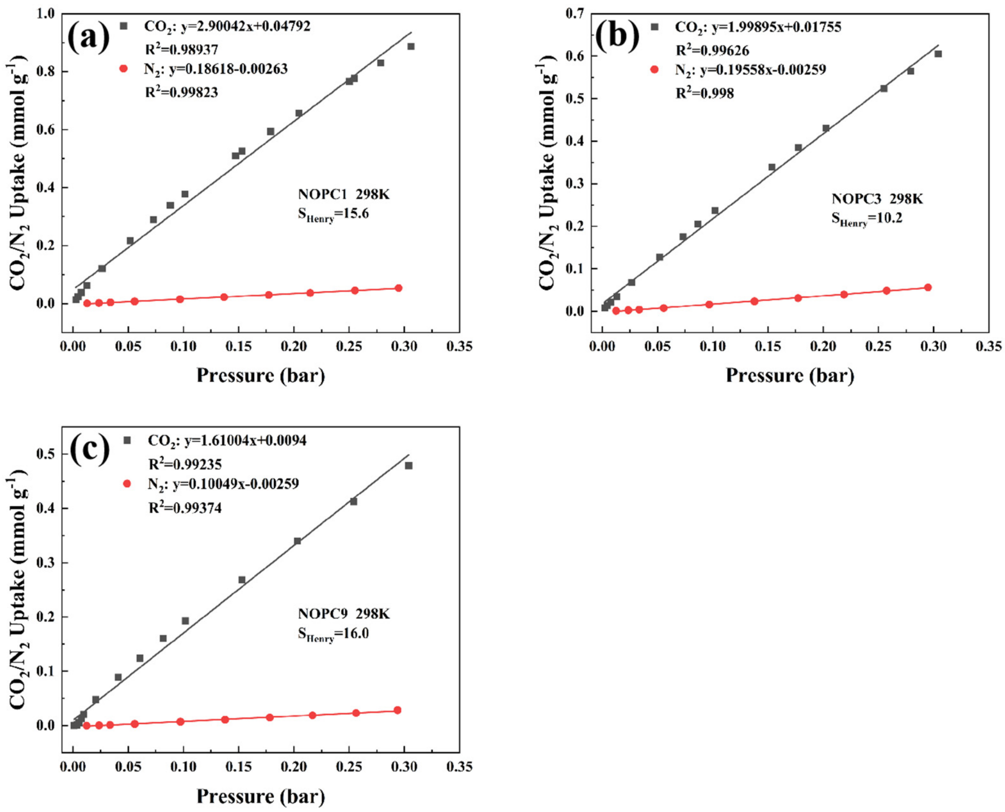

Figure S3. The CO_2/N_2 selectivity by Henry's law on NOPC1 (a), NOPC3 (b) and NOPC9 (c) at 298 K.

Table S1. The elemental composition of NOPCs analyzed by EA.

Sample	Element content (wt%)			
	C	H	O	N
NOPC0	86.47	1.555	8.475	2.94
NOPC1	88.15	1.423	8.000	2.26
NOPC3	85.00	1.587	10.215	2.65
NOPC9	85.52	1.365	10.442	2.00

Table S2 The surface elemental composition of NOPCs calculated by XPS results.

Sample	Atomic %			
	C 1s	N 1s	O 1s	P 2p
NOPC0	83.99	2.66	12.01	1.35
NOPC1	93.39	1.97	4.21	0.43
NOPC3	92.53	2.48	4.58	0.41
NOPC9	91.96	2	5.59	0.45