Supporting Information

for

Enhancing low pressure CO_2 adsorption of solvent-free derived mesoporous carbon by highly dispersed potassium species

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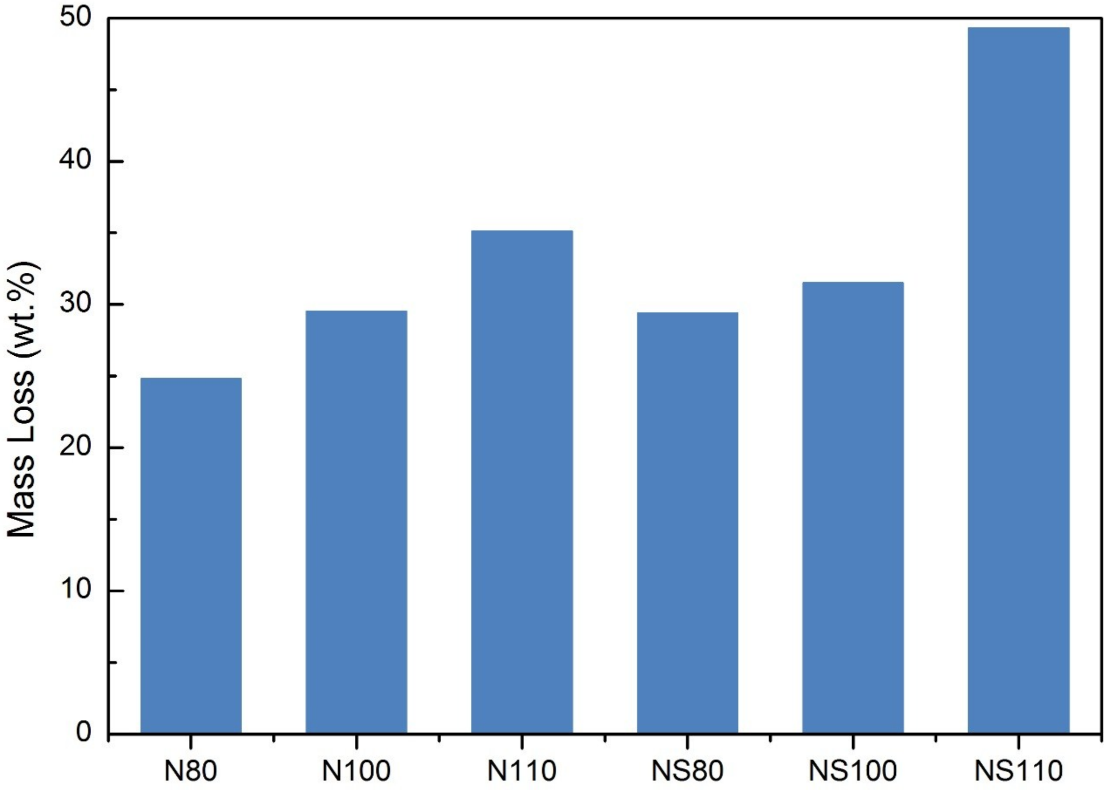

Fig. S1 Mass loss of oxidized MC at 1000^{o}C

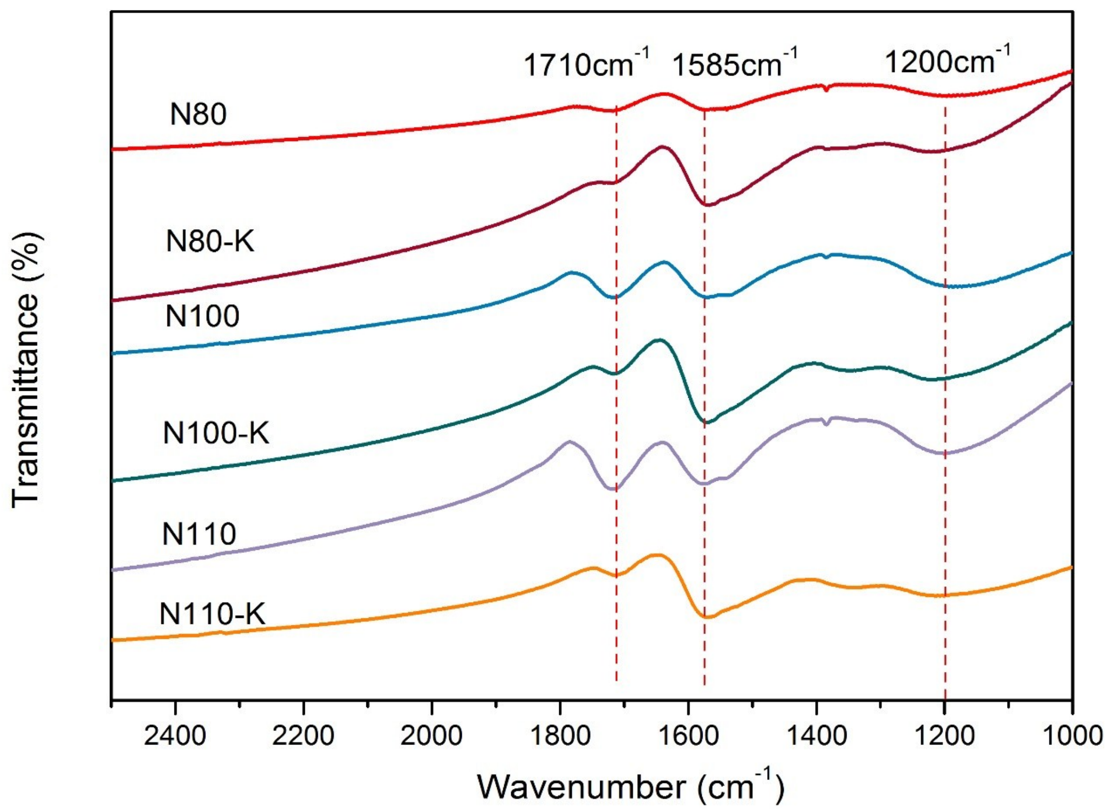

Fig. S2 FT-IR spectra of N***x*** samples

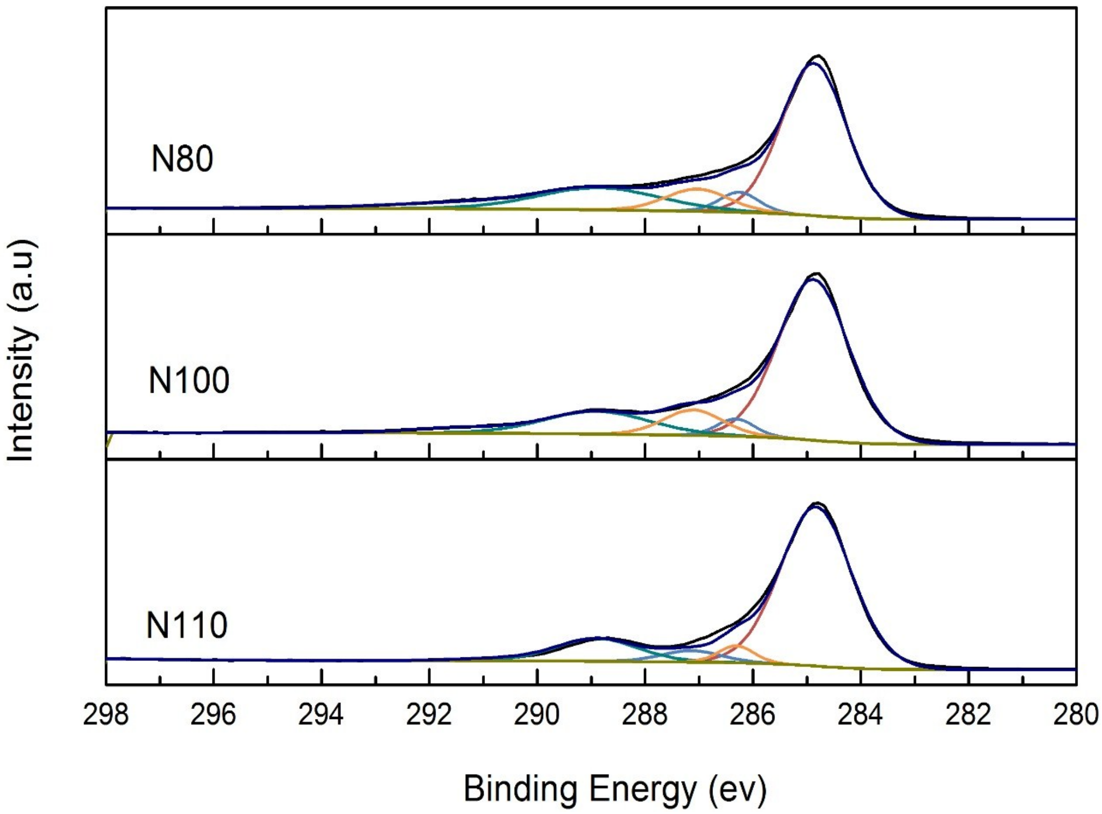

Fig. S3 C1s XPS spectra of N*x* samples

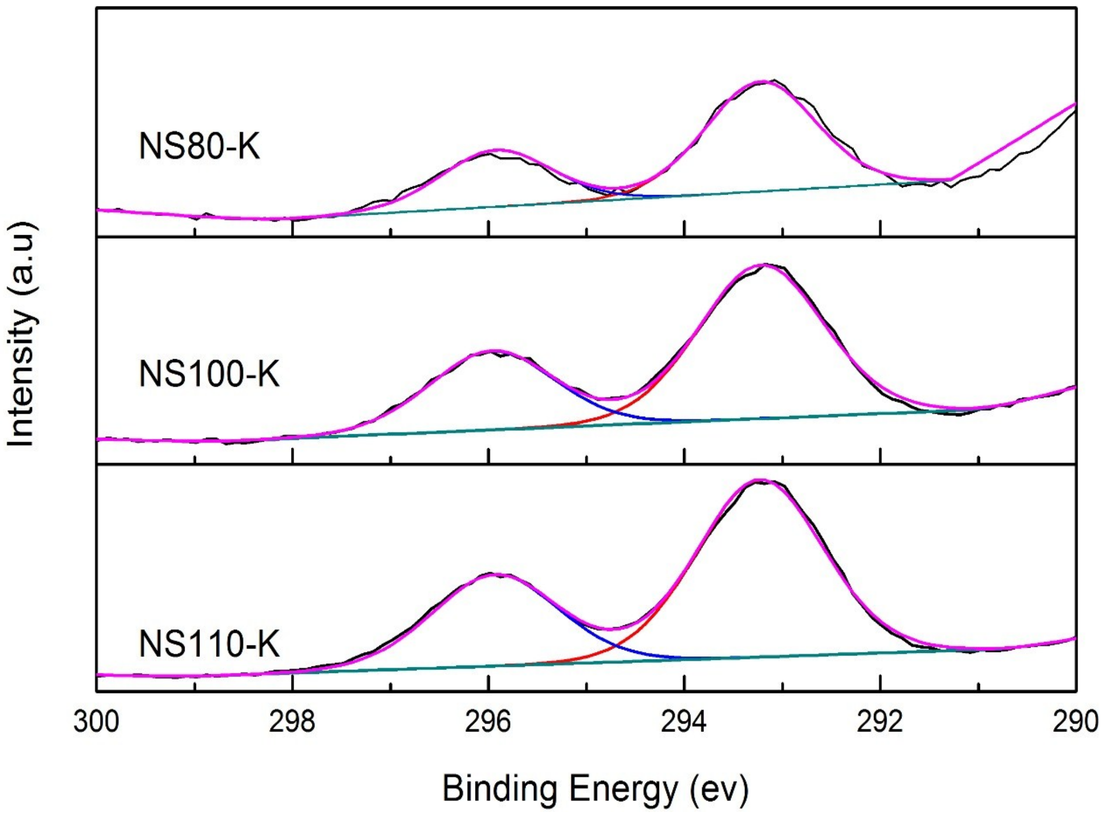

Fig. S4 K2p XPS spectra of NS*x*-K

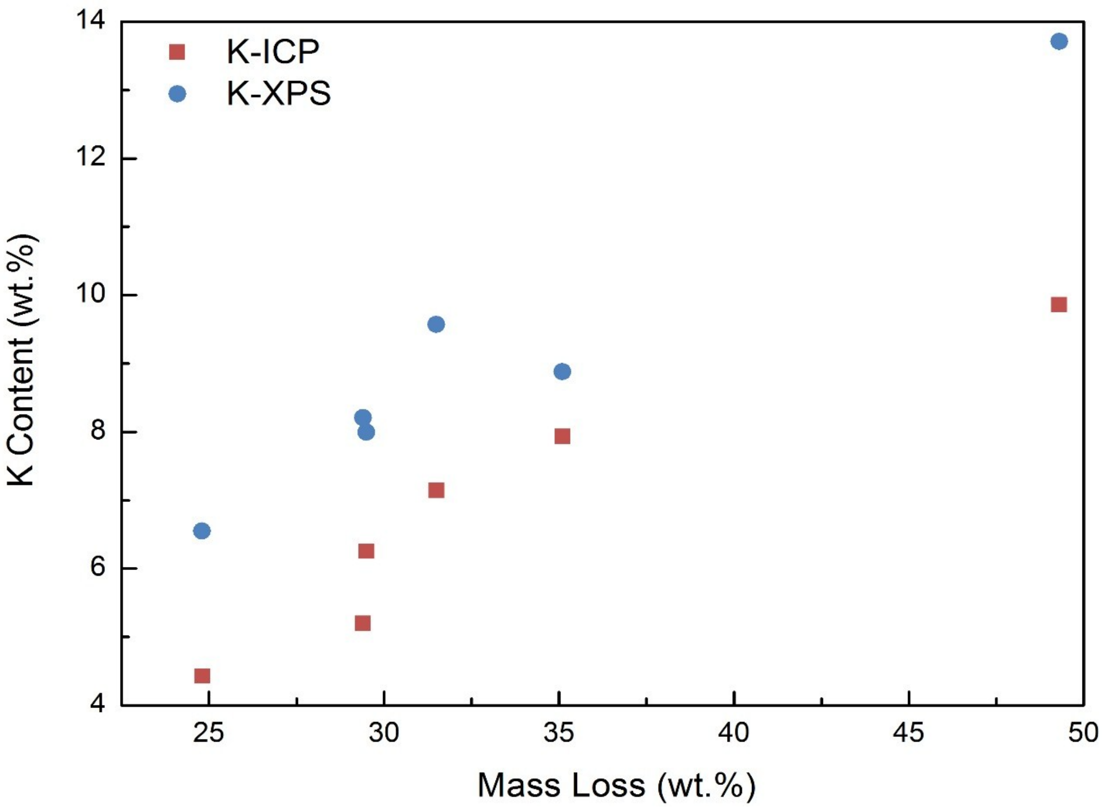

Fig. S5 The relationship between potassium loading and mass loss of the oxidized counterparts

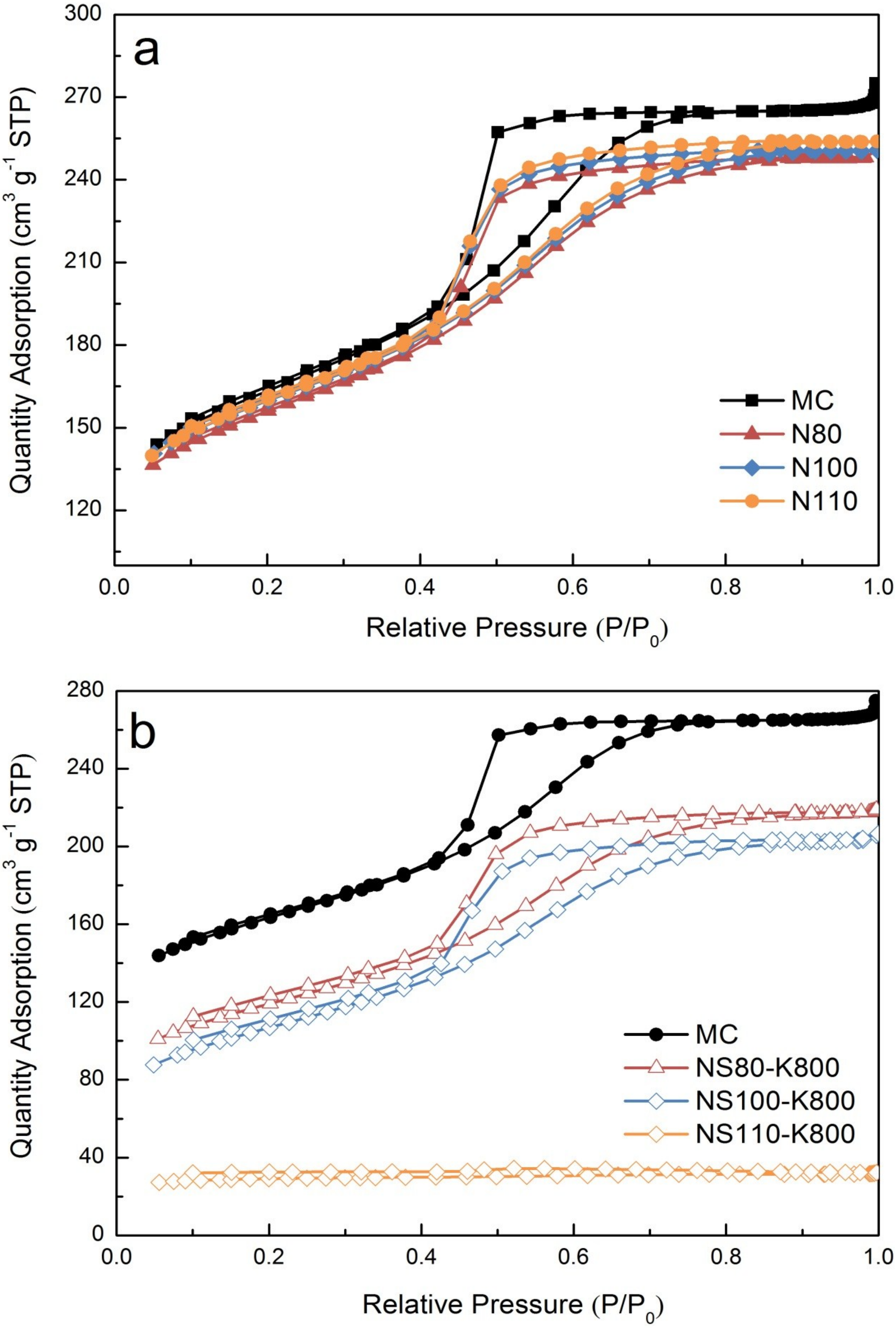

Fig. S6 Low temperature (-196 ^{o}C) N_2 isotherms. (a) MC and N***x*** series, (b) MC and NS***x*** series

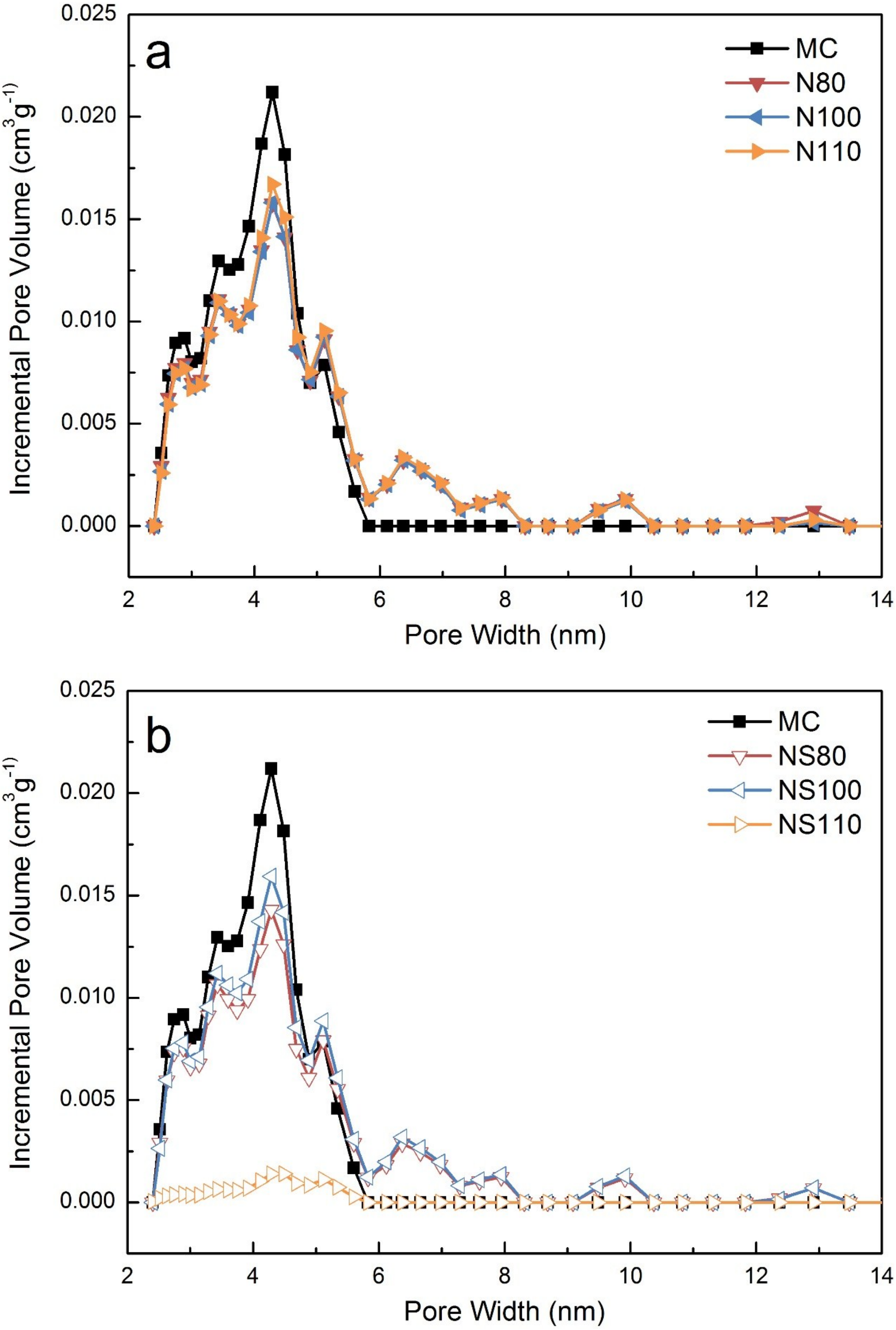

Fig. S7 NLDFT pore size distribution. (a) MC and N***x*** series, (b) MC and NS***x*** series

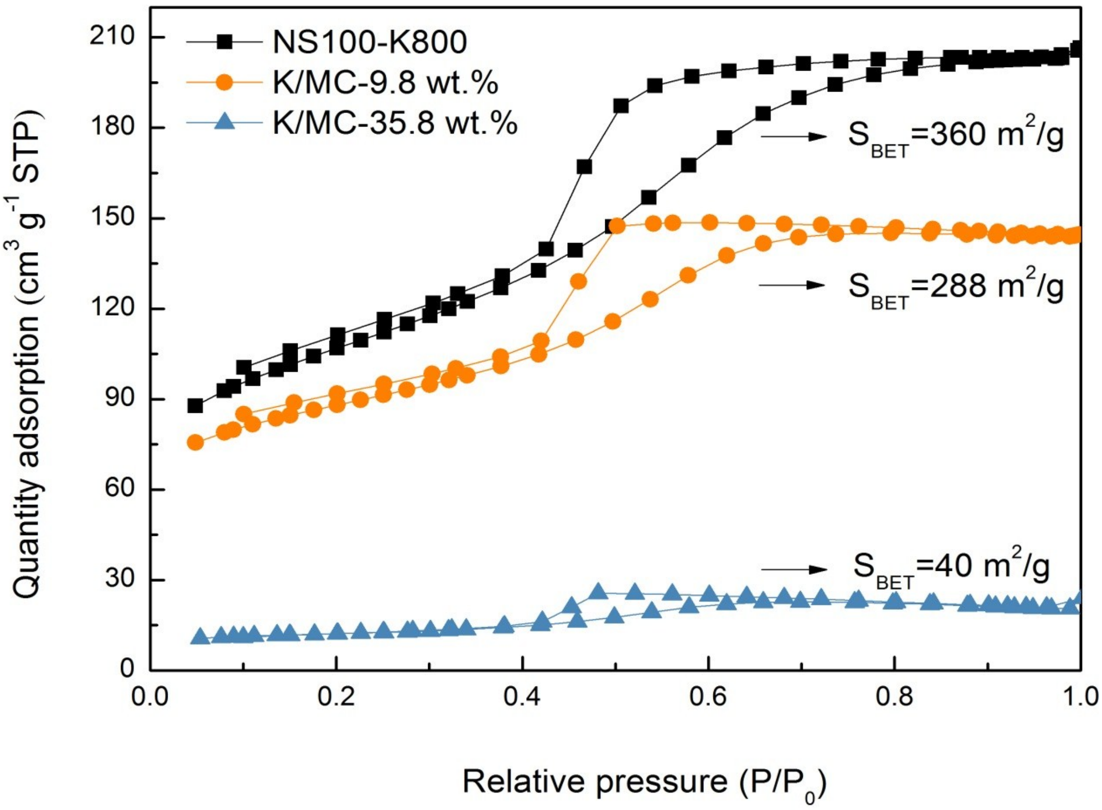

Fig. S8 Comparison of N_2 isotherm and surface area of impregnated sample with NS100-K800

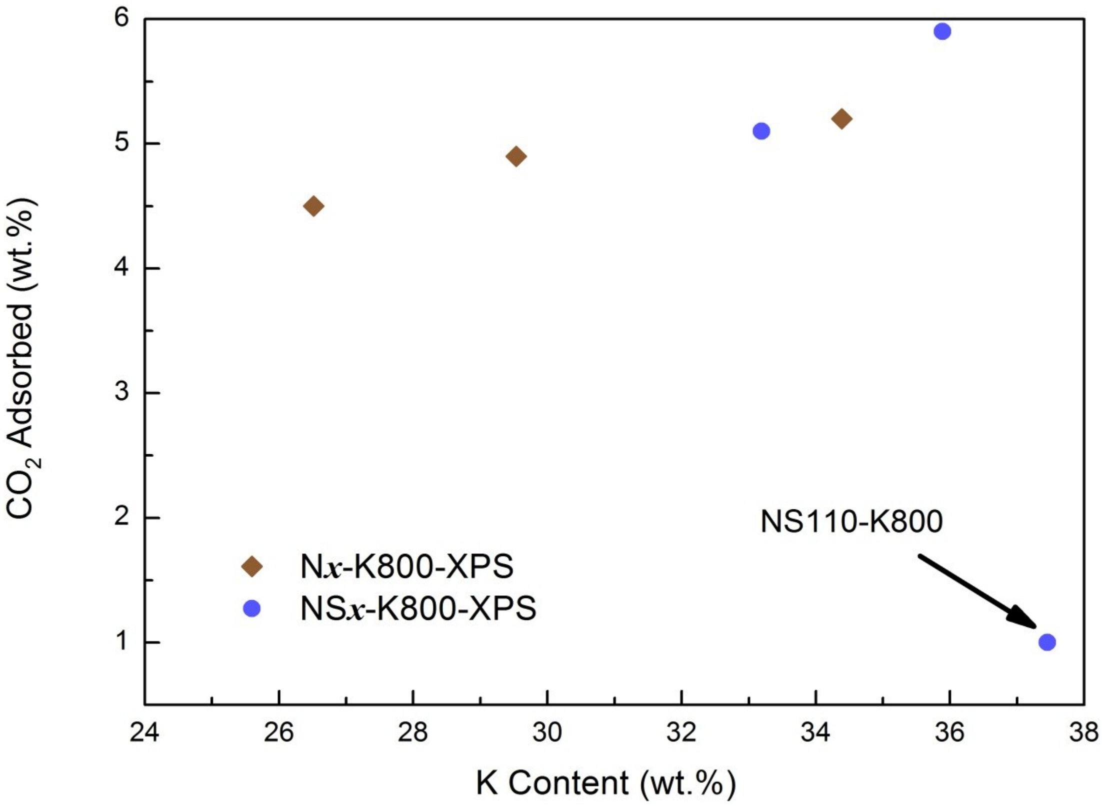

Fig. S9 Relationship between surface K content and CO_2 uptake (0.15bar)

Table S1 Comparison on the adsorption capacities of NS100-K800 and other carbon adsorbents

Materials	Precursors	S_{BET} (m^2/g)	CO_2 uptake (wt.%) (25 ^oC, 0.15 bar)	Ref.
NS100-K800	Phenolic resin	360	5.9	This work
KNC-A-K	p-diaminobenzene	614	7.9	[1]
C-CA-6-KOH	Phenolic resin	1709	3.9	[2]
PR3_700	Phenolic resin	826	6.6	[3]
CTNC-C800	Polyacry-lonitrile-block-polymer	-	5.1	[4]
CEM-750	-	3360	4.3	[5]
PA-400-KOH-1-600	Biomass	837	6.1	[6]
C-KOH	-	2030	4.0	[7]
NMC250D8H	Melamine phenolic resin	385	5.3	[8]
MR-1-500	Melamine Phenolic resin	1286	5.4	[9]
VR-93	Petroleum pitch	2895	4.5	[10]

Reference

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