Electronic Supplementary Material (ESI) for RSC Advances

Cellulose Generated- Microporous Carbon Nanosheets with Nitrogen Doping

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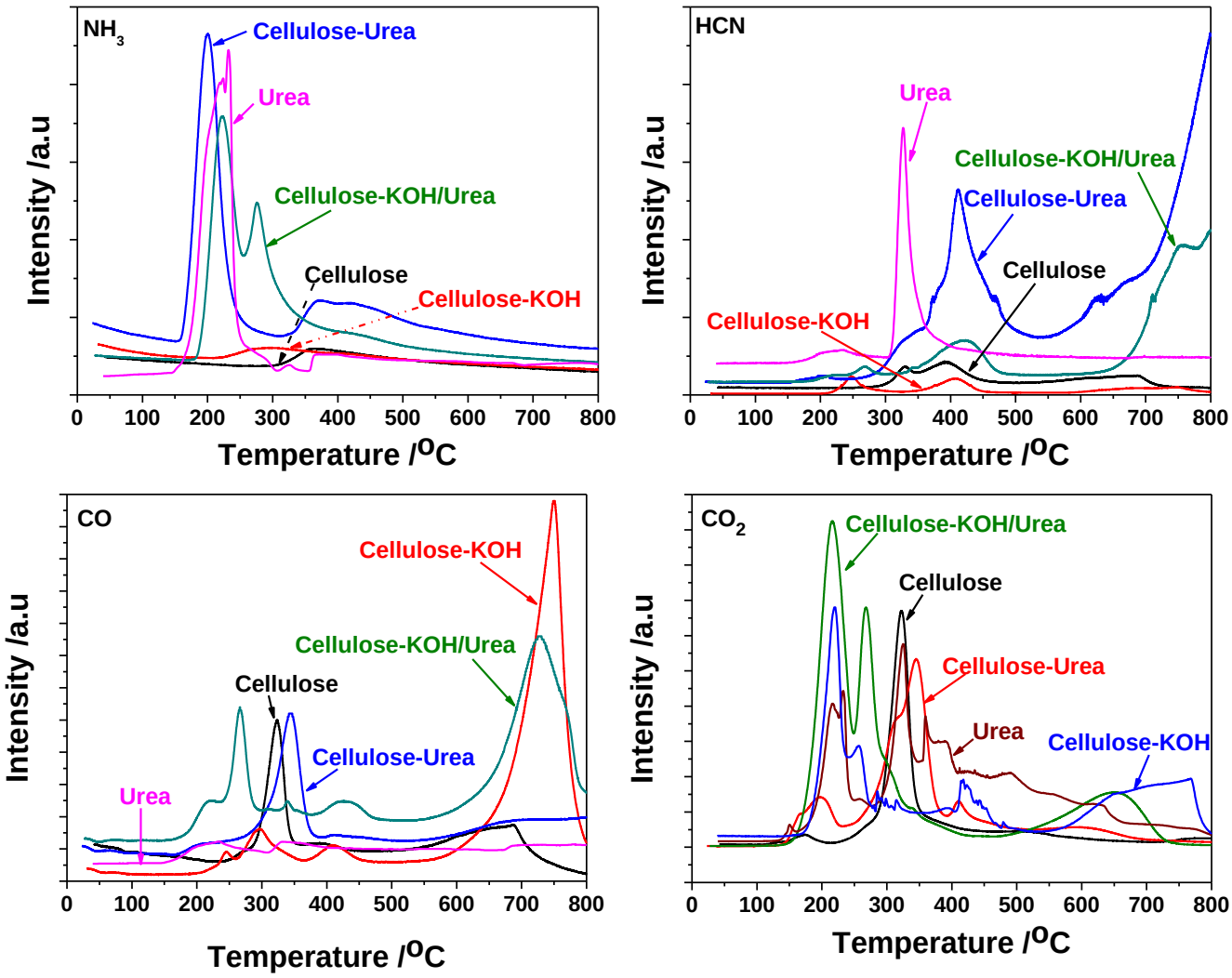

Figure S1. Exhaust gases of urea, pristine cellulose, cellulose with urea, cellulose with KOH, and cellulose with KOH/urea during heating in argon atmosphere.

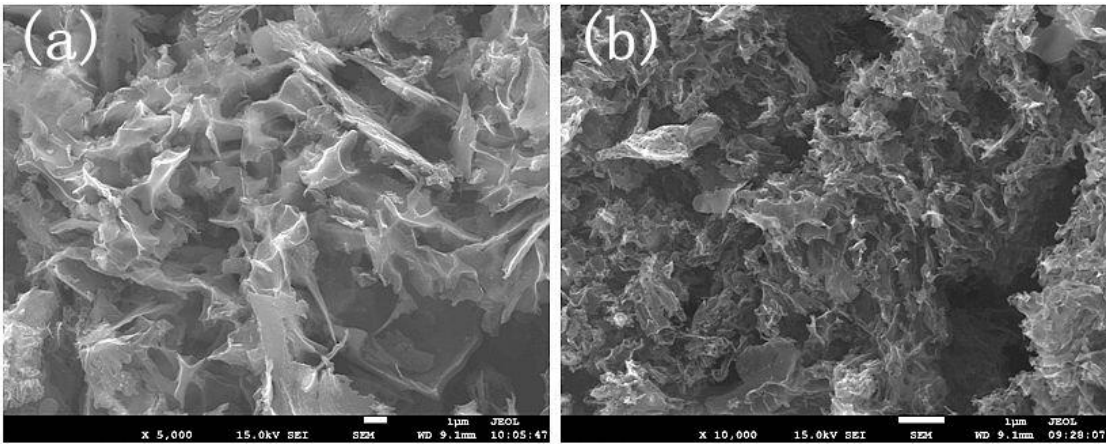

Figure S2. High-magnification SEM images of the cellulose with urea carbonized at 600^{o}C (a) and 800 ^{o}C (b).

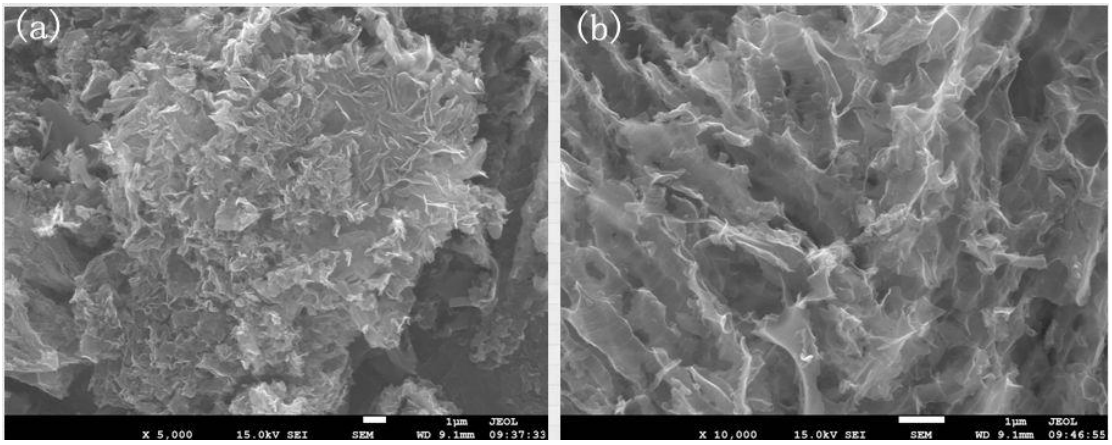

Figure S3. High-magnification SEM image of samples cellulose with KOH activated at 600^{o}C (a) and 800 ^{o}C (b) after removal of potassium salt.

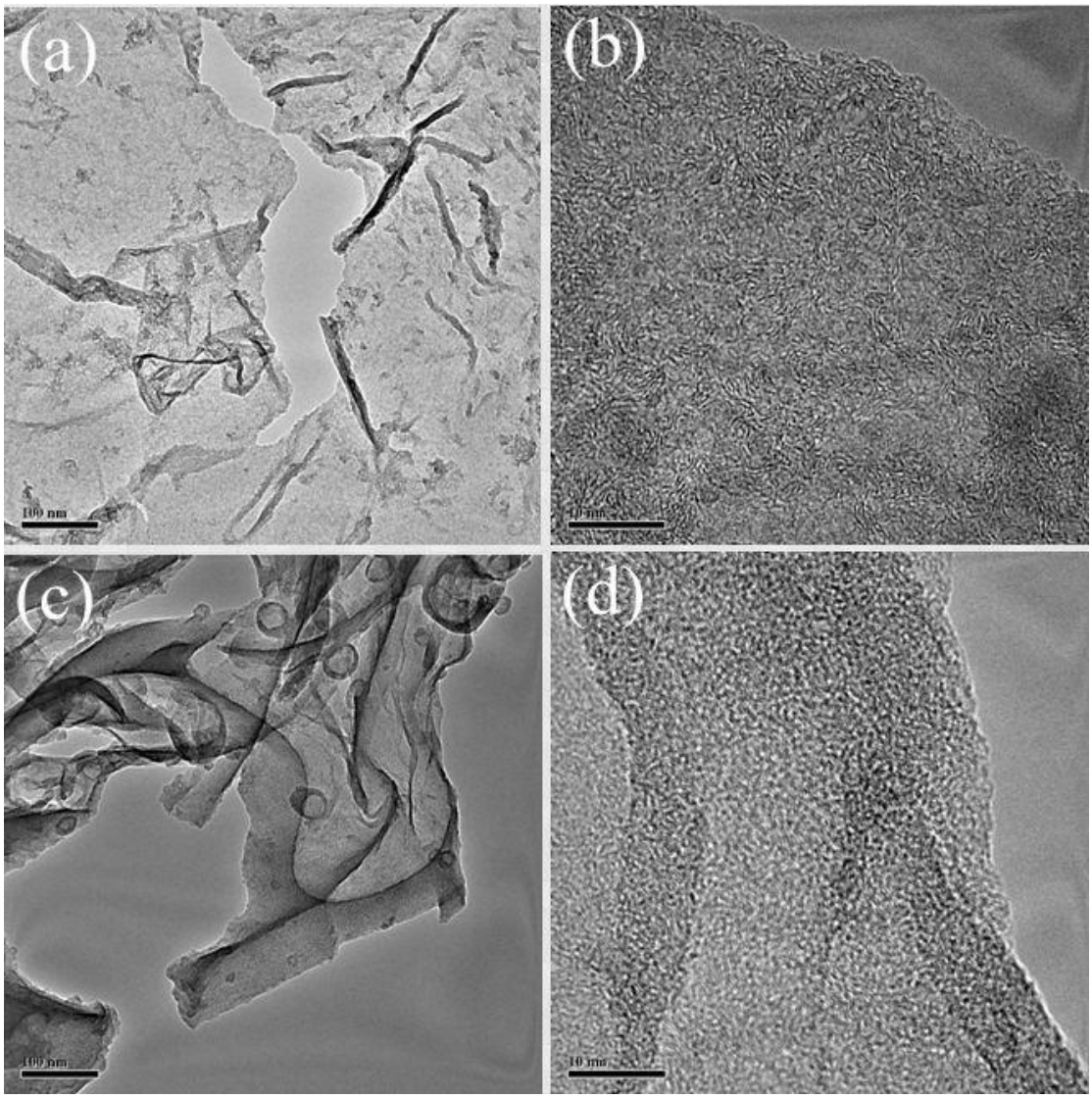

Figure S4. TEM images of nanosheet porous carbons at different resolutions. (a) and (b) C-KU-600; (C) and (D) C-KU-800.

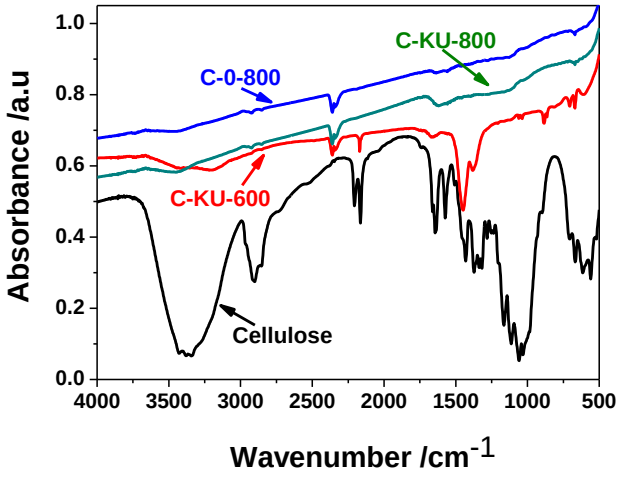

Figure S5. FT-IR spectra of C-O-800, C-KU-600 and C-KU-800.

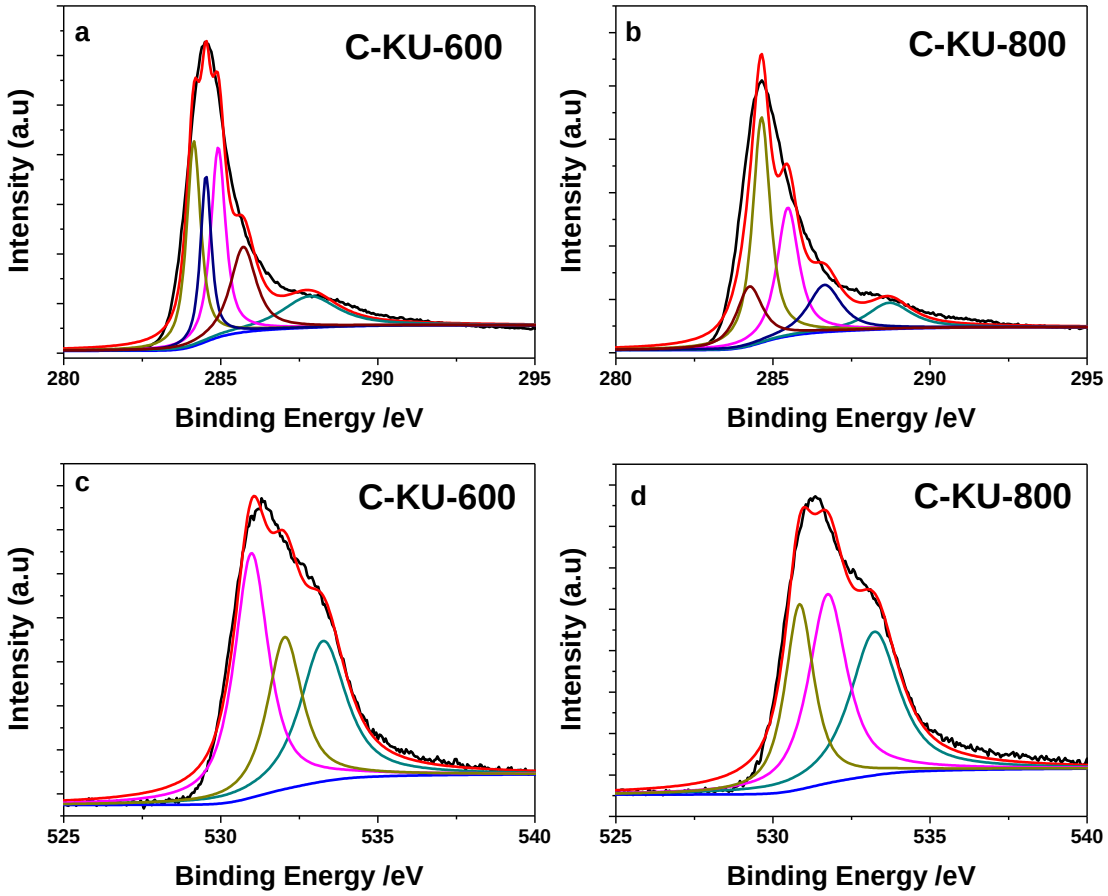

Figure S6. High-resolution C1s, O1s XPS spectra of C-KU-600 (a, c) and C-KU-800 (b, d).

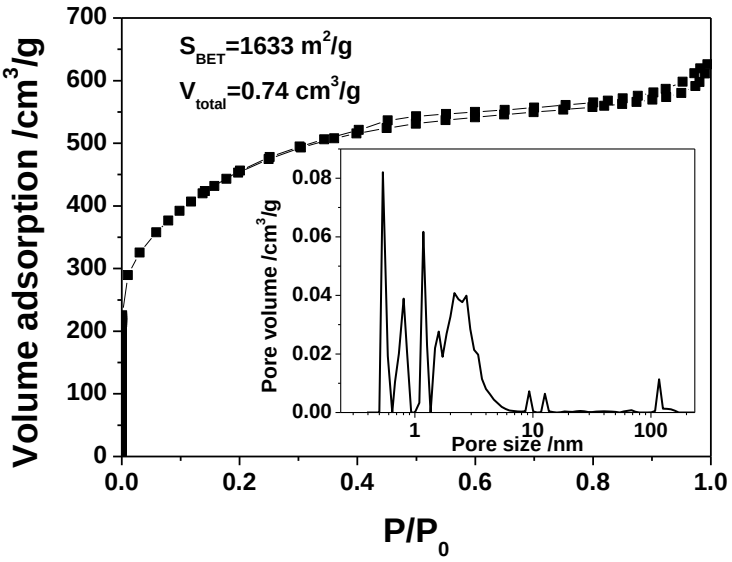

Figure S7. N_2 sorption isotherms and NLDFT pore size distributions (inserted) of porous carbon from cellulose impregnated with NaOH/urea (activated at 800 ^{o}C).

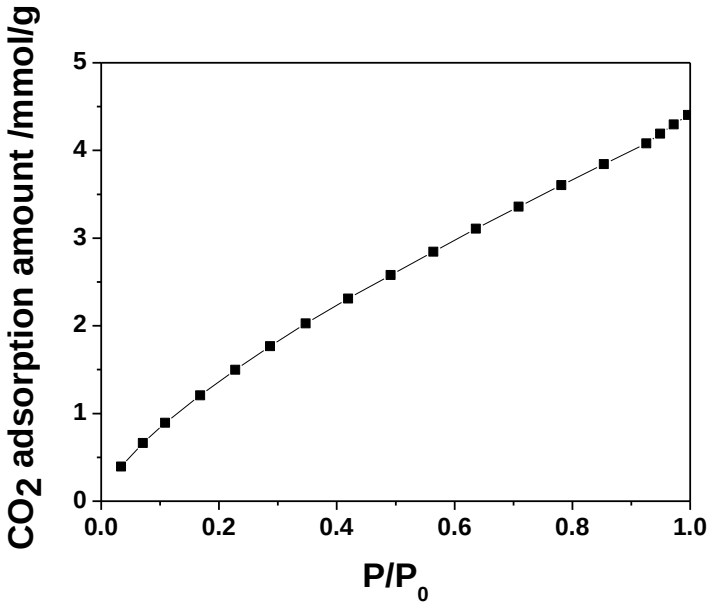

Figure S8. CO_2 adsorption isotherms of porous carbon from cellulose impregnated with NaOH and urea carbonization at 800 ^{o}C.

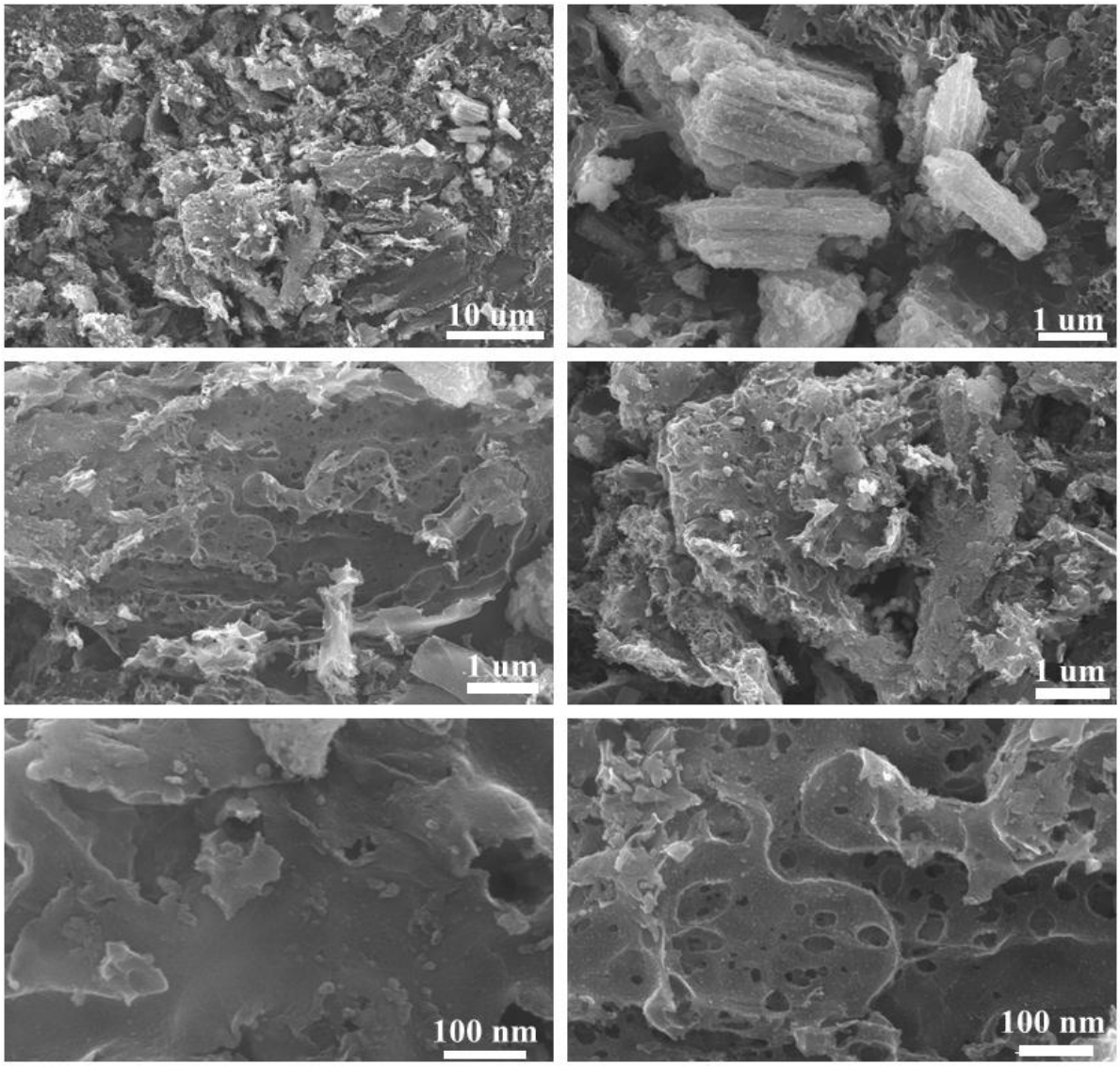

Figure S9. SEM images of porous carbon from cellulose impregnated with NaOH and urea activation at 800 ^{o}C.

Table 1S Relative content of different nitrogen groups present in the C-KU-600 and C-KU-800 from the XPS N 1s spectra.

Samples	Relative content of different *N* structuresa (at.%)[a*]		
	N-6	N-5	N-Q
C-KU-600	37.55	40.26	22.18
C-KU-800	38.71	44.28	17.01

Note: pyridine-like (N-6) at 398.3 eV, pyrrole-like (N-5) at 400.1eV and graphite-like (N-Q) at 401.3eV.