Supporting Information

Nitrogen doped carbon derived from deep eutectic solvent as high performance supercapacitor

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It can be seen that the chemical shift of the mixture (Figure S1c) was in between those of their individual components (L-tyrosine and urea, Figure S1a and b), suggesting the existence of weak interactions of hydrogen bonds between the individual components[1]. FT-IR spectra of tyrosine or urea and DESs are showed in Figure 1d. The peak at 3300-3500 cm^{-1} is belong to the vibration absorption band of -NH_2. The peak at 1610 cm^{-1} (N-H stretching vibration) appeared in urea, but the -NH stretching vibration shifts to lower wave number (red shift) in the DES (Figure S1d), which further indicating the forming of hydrogen bonding in DESs.[2]

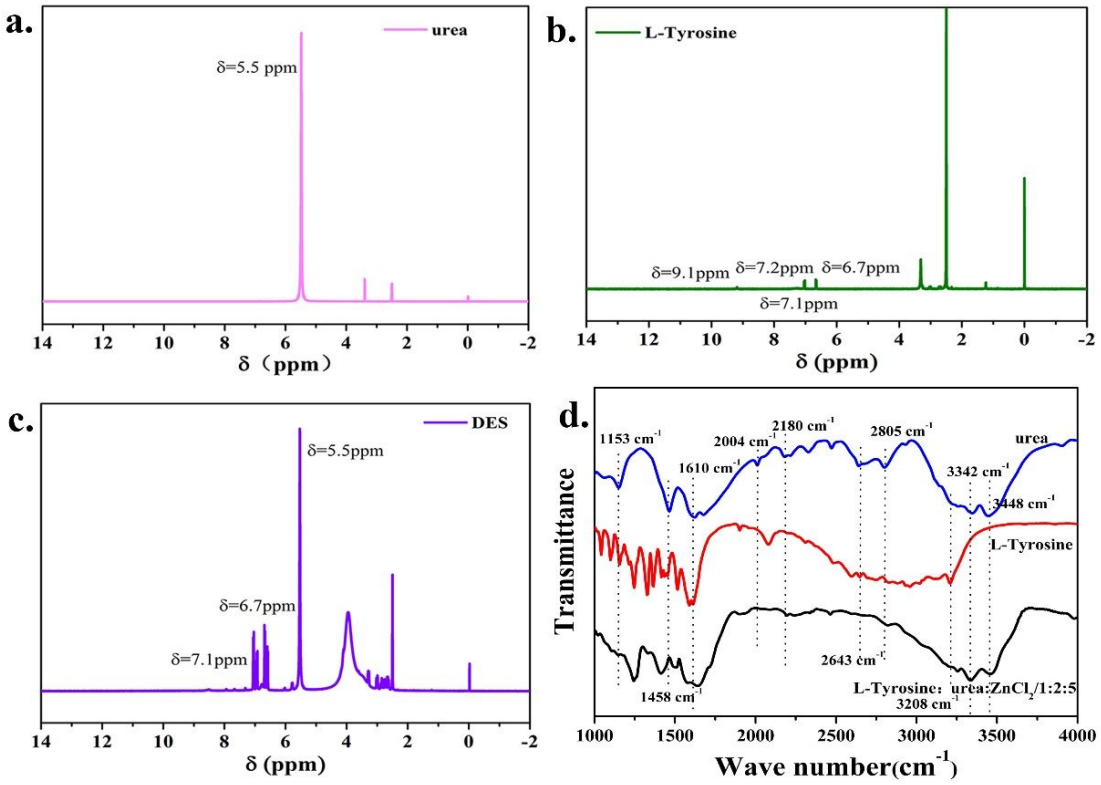

Figure S1. 1H NMR spectra of (a) urea, (b) L-tyrosine and (c) DES; (d) FTIR spectra of DES.

Table S1. Different N functionalities ratio of NCs

Samples	N content (%)			
	Pyridinic-N	Pyrrolic-N	Graphtic- N	Oxidized-N

NCs-800-2-5	25.6	48.3	19.9	6.2
NCs-900-1-5	25.0	45.2	17.2	12.6
NCs-900-2-10	31.5	39.4	15.0	14.1
NCs-900-2-5	34.3	47.0	17.4	1.3
NCs-900-2-2.5	28.3	54.4	17.3	-
NCs-900-3-5	25.4	39.0	22.4	13.2
NCs-1000-2-5	25.8	48.5	22.2	3.5

Tabel S2. Comparison of the specific capacitance of some reported carbon materials with our prepared samples.

Sample	Current density ($A\ g^{-1}$)	Capacitance ($F\ g^{-1}$)	Electrolyte	Reference
JS-CK_2NS	1.0	262	6 M KOH	Electrochim. Acta, 2020, 331, 135338-135348
CNSs-3	0.5	283	6 M KOH	ACS Appl. Mater. Interfaces, 2014, 6, 20795-20803
N-PCs-700	1.0	255	2 M KOH	Bioresource Technol., 2015, 197, 137-142
NOCS-1/10	0.5	242	6 M KOH	J. Mater. Chem. A, 2018, 6, 17730-17739
$PC_{4/1\text{-}C}$	0.05	245	6 M KOH	Electrochim. Acta, 2013, 105, 635-641

N-CBDC-5	1.0	260	1 M KOH	Energy, 2019, 189, 116241-116248
PFC-700	0.5	270	6 M KOH	J. Power Sources, 2017, 341, 309-317
N-MCs	0.2	318	6 M KOH	Appl. Surf. Sci., 2017, 422, 654-660
PCNS-600	1.0	306	6 M KOH	Nano Energy, 2018, 51, 366-372
HPNCT-800	1.0	292	6 M KOH	J. Mater. Chem. A, 2016, 4, 1637-1646
NCs-900-2-5	0.5	307	6 M KOH	This work

References

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(2) Zhang, Q.; Vigier, K. D. O.; Royer, S.; Jérôme, F. Deep eutectic solvents: syntheses, properties and applications. *Chem. Soc. Rev.* **2012**, *41*, 7108-7146.