Supporting Information

Self-supported Ni nanoparticles embedded on nitrogen-doped carbon derived from nickel polyphthalocyanine for high-performance non-enzymatic glucose detection

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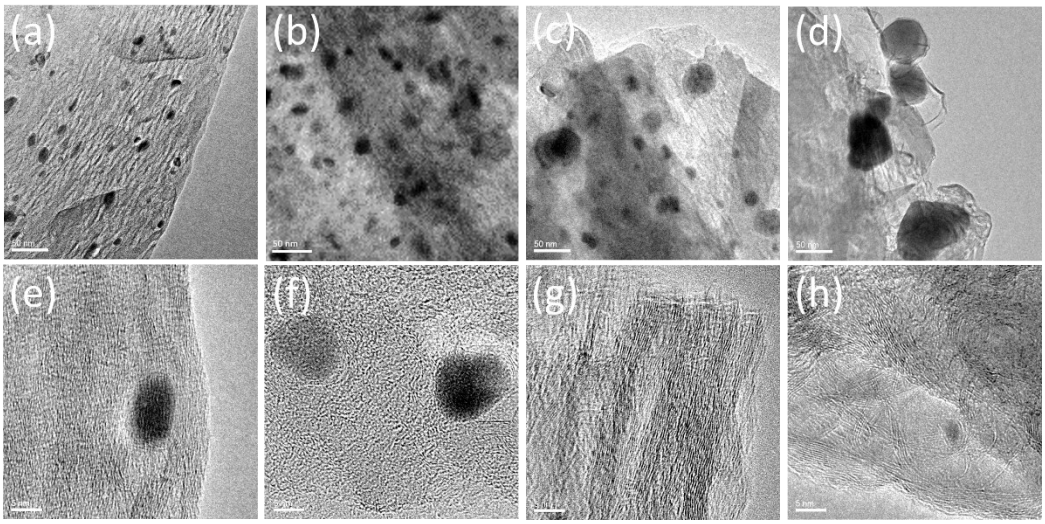

Fig. S1. TEM of Ni/NC-*t* samples and *t*: (a) (e) 700 °C, (b) (f) 800 °C, (c) (g) 900 °C and (d) (h) 1000 °C.

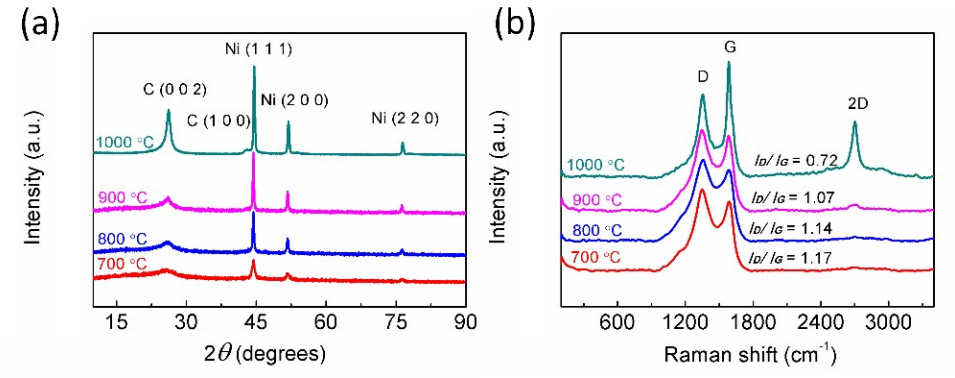

Fig. S2. (a) XRD patterns, (b) Raman spectra of Ni/NC-*t* samples.

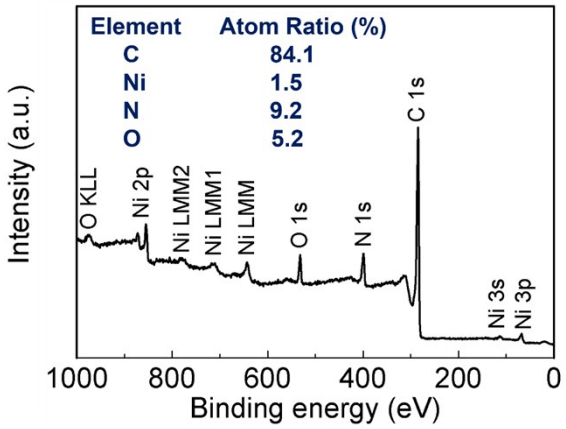

Fig. S3. XPS survey scan of Ni/NC-800.

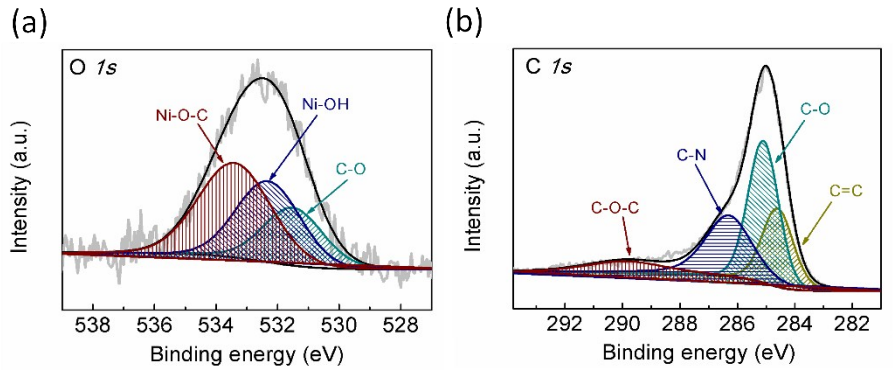

Fig. S4. XPS spectra of Ni/NC-800 for (a) O 1*s* and (b) C 1*s*.

Table S1. Elemental percentage of total Ni 2*p*, N 1*s*, O 1*s* and total C 1*s* analysed by XPS measurements.

Name	**% of total Ni 2*p***		
	Ni^0	Ni^{2+}	Ni^{3+}
Peak position (eV)	852.8	854.9	856.2
Percentage %	8.3	70.8	20.9

Name	**% of total N 1*s***			
	pyridinic N/ Ni-N	pyrrolic N	graphite N	oxidized N
Peak position (eV)	398.6	399.3	400.9	404.8
Percentage %	23.6	22.3	48.6	5.5

Name	**% of total O 1*s***		
	Ni-O-C	Ni-OH	C-O
Peak position (eV)	531.5	532.3	533.4
Percentage %	23.0	32.6	44.4

Name	**% of total C 1*s***			
	C=C	C-O	C-N	C-O-C
Peak position (eV)	284.6	285.1	286.3	289.9
Percentage %	22.8	38.8	29.3	9.6

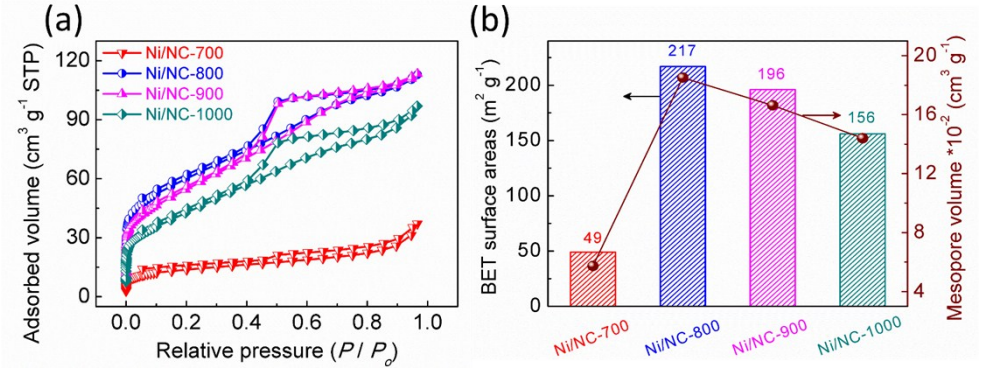

Fig. S5. (a) N_2 adsorption-desorption isotherms of Ni/NC-*t* samples and (b) BET surface areas and mesoporous volume.

Table S2. BET characterization of Ni/NC-*t* samples

Sample	Mesopore volume (cc g^{-1})	Surface area (m^2 g^{-1})
Ni/NC-700	0.05738	49
Ni/NC-800	0.1851	217
Ni/NC-900	0.1663	196
Ni/NC-1000	0.1440	156

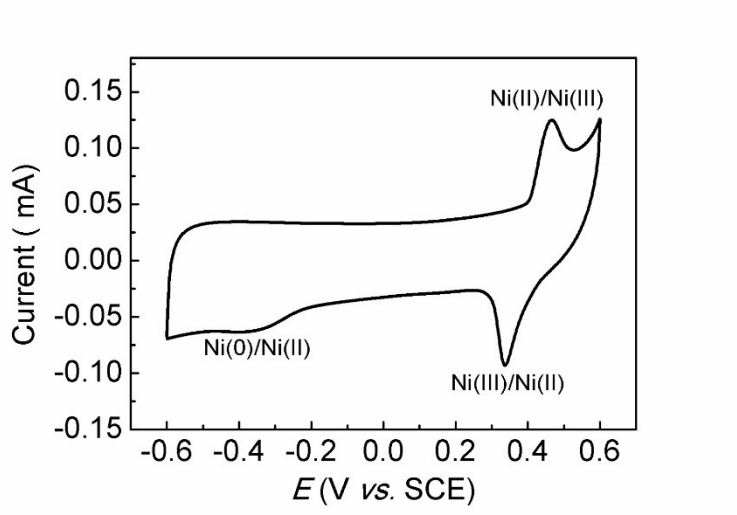

Fig. S6. The CV curve of Ni/NC-800 at the scan rate of 100 mV s^{-1} from -0.6 to 0.6 V in 0.1 M NaOH solution

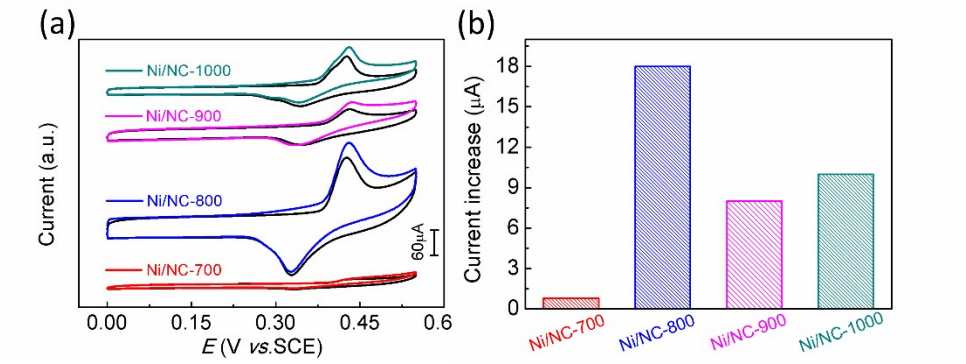

Fig. S7. (a) CV curves of the Ni/NC-*t* samples in the absence and presence of 0.5 mM glucose at a scan rates of 20 mV s^{-1} in 0.1 M NaOH solution. (b) Comparison of electroanalytical responses with the addition of 0.5 mM glucose.

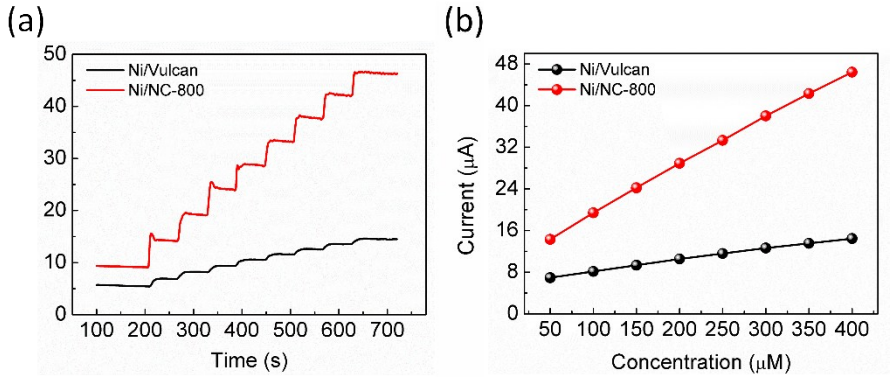

Fig. S8. (a) Amperometric responses of the Ni/NC-800 and Ni/Vulcan modified GCE towards the step addition of 50 μM glucose at 0.50 V. (b) Linear relationship of the response current and the glucose concentration.

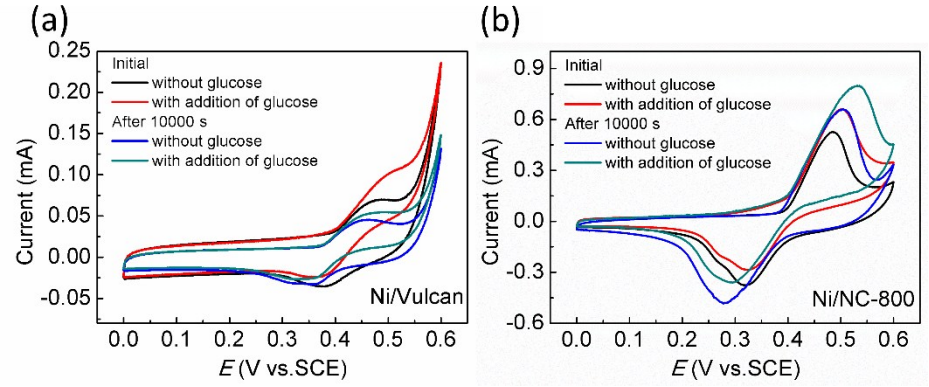

Fig. S9. CV curves of (a) Ni/Vulcan and (b) Ni/NC-800 with and without the addition of 2 mM glucose at the scan rate of 40 mV s^{-1} before and after 10000 s of continuous work under a constant potential of 0.50 V.