

Prism-like bimetallic (Ni-Co) alkaline carboxylate based non-enzymatic sensor capable of exceptionally high catalytic activity towards glucose

Dandan Chu, Yan Wang, Dong Li, Xue-Qiang Chu, Danhua Ge,* Xiaojun Chen*

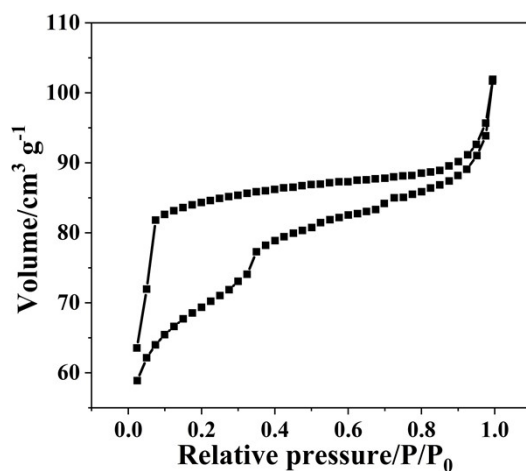


Fig. S1. N₂ adsorption-desorption isotherm of CoNi-MIM (1:1).



Fig. S2. SEM images of (A) CoNi-MIM (1:2.5) and (B) CoNi-MIM (1:4).

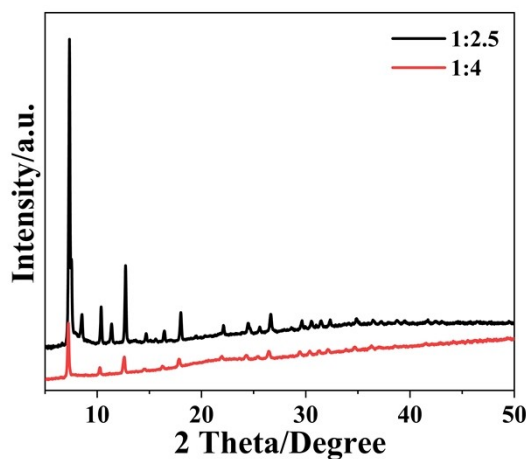


Fig. S3. XRD patterns of CoNi-MIM (1:2.5) and CoNi-MIM (1:4).

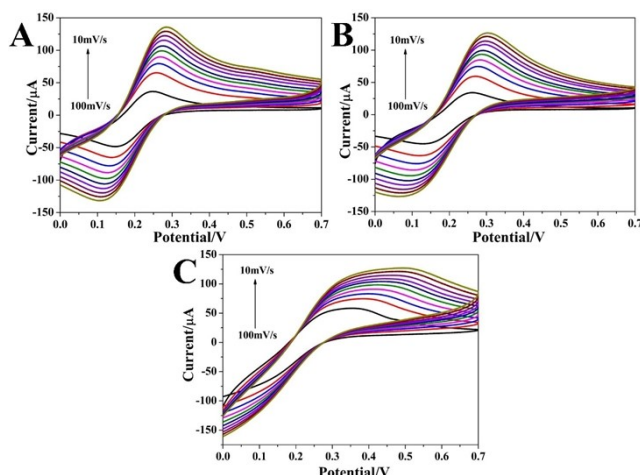


Fig. S4. The scan rate study of CoNi-MIM (1:1 (A), 1:2.5 (B) and 1:4 (C)) electrodes with different amounts of 2-methylimidazole in 0.1 M KCl solution containing 5 mM $K_3[Fe(CN)_6]$.

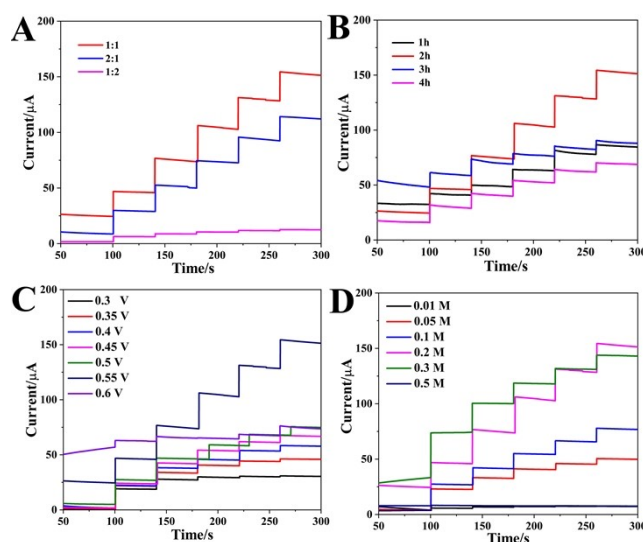


Fig. S5. Chronoamperometric responses of the CoNi-MIM/ITO to the successive addition of 1 mM glucose at 0.55 V in 0.2 M NaOH with different ratios of Co^{2+} and Ni^{2+} (A) and treated by different holding time (B). Chronoamperometric responses of the CoNi-MIM/ITO to the successive addition of 1 mM glucose in 0.2 M NaOH at different working potentials (C) and at 0.55 V in different concentrations of NaOH solution (D).

Table S1. The performance comparison of different non-enzymatic glucose sensors.

Electrode	Sensitivity $\mu A\ mM^{-1}\ cm^{-2}$	Linear range μM	LOD/ μM	Ref.
Ni/Co UMOFNs	2086.7	1-1400	0.047	[1]
Ni/Co-PB/CuO/GCE	600	5-100	0.69	[2]
(Ni-Co)(OH) ₂	122.45	25-3700	1.2	[3]

Ni(II)-CP/C ₆₀ /GCE	614.29	10-3000 3000-11000	4.3	[4]
GCE/CNF@Ni _{0.66} Co _{0.33} (OH) ₂	1470	1-2000	0.03	[5]
CuO/CoNi-LDHs-2-GCE	-	0.1-384	0.065	[6]
Amorphous Co-Ni hydroxide	1911.5	0.25-5000	0.12	[7]
Ni ₃ (HITP) ₂	-	0-10000	-	[8]
CoNi-MIM (1:1)/ITO	5024.4 216.8	1-35 35-14300	0.056	This work

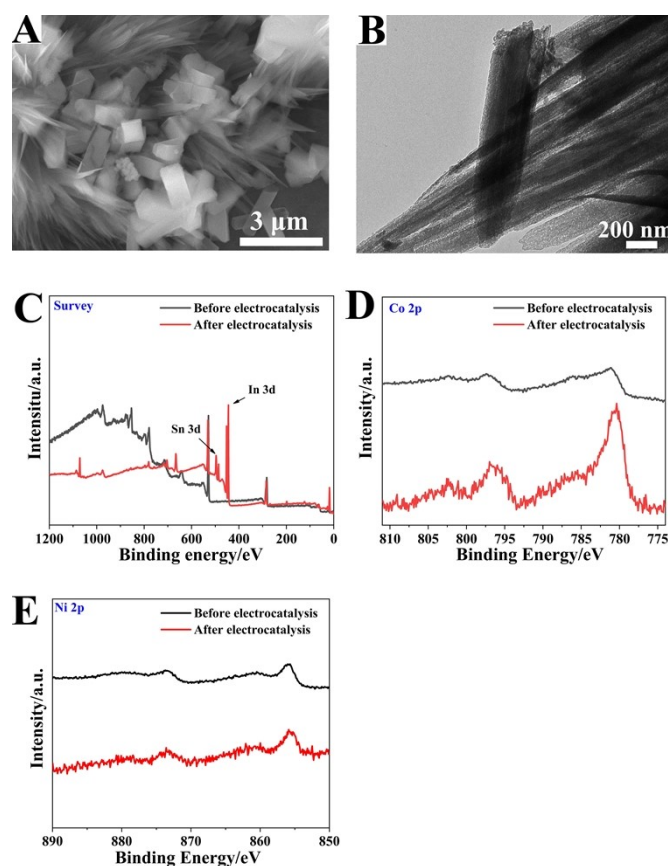


Fig. S6. SEM image (A) and TEM image (B) of activated CoNi-MIM (1:1). (C) Full range XPS survey spectrum, (D) Co 2p spectrum and (E) Ni 2p spectrum of CoNi-MIM (1:1) before and after electrocatalysis.

Reference

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