

Supporting Information for

A CuNi/C Nanosheet Array Based on Metal-Organic Framework Derivate as a Supersensitive Non-Enzymatic Glucose Sensor

Li Zhang¹, Chen Ye¹, Xu Li², Yaru Ding¹, Hongbo Liang¹, Guangyu Zhao¹, Yan Wang^{1,*}

¹School of Chemistry and Chemical Engineering, Harbin Institute of Technology, Harbin, Heilongjiang 150080, People's Republic of China

²Department of Ophthalmology, the Second Hospital, Jilin University, Changchun, Jilin 130022, People's Republic of China

*Corresponding author. E-mail: wangy_msn@hit.edu.cn

Tel/Fax: +86 451 86403719

Figures

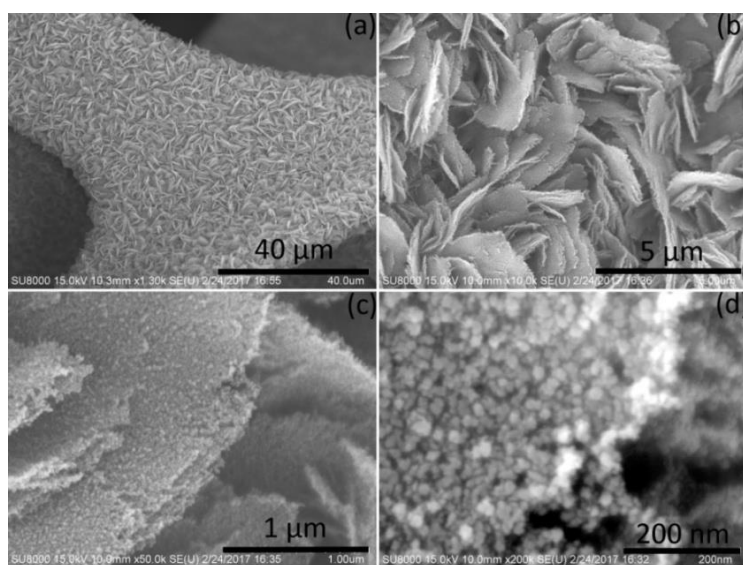


Fig. S1 SEM images of Ni/C nanosheet arrays derived from Ni-MOFs

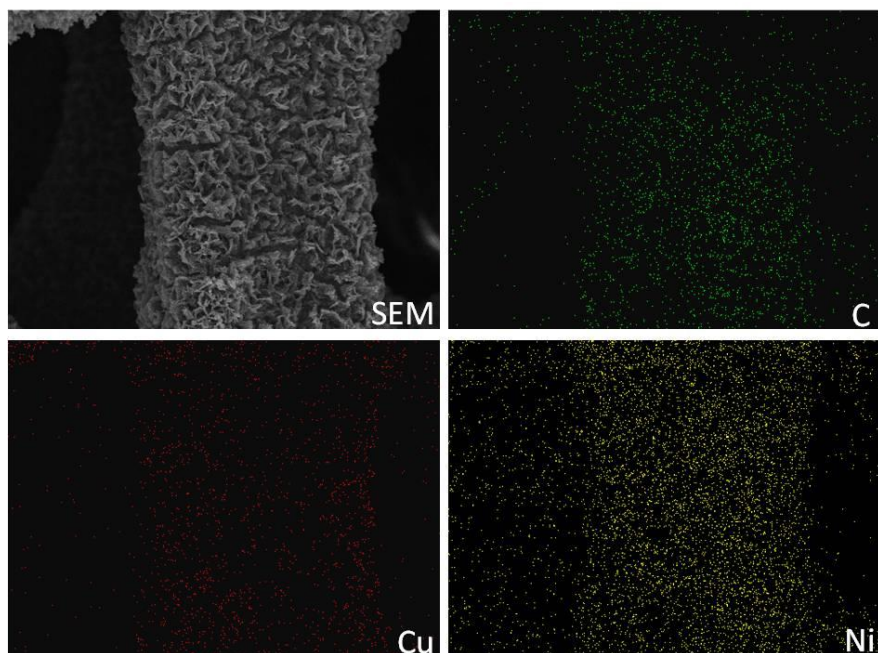


Fig. S2 Element mapping from EDS test

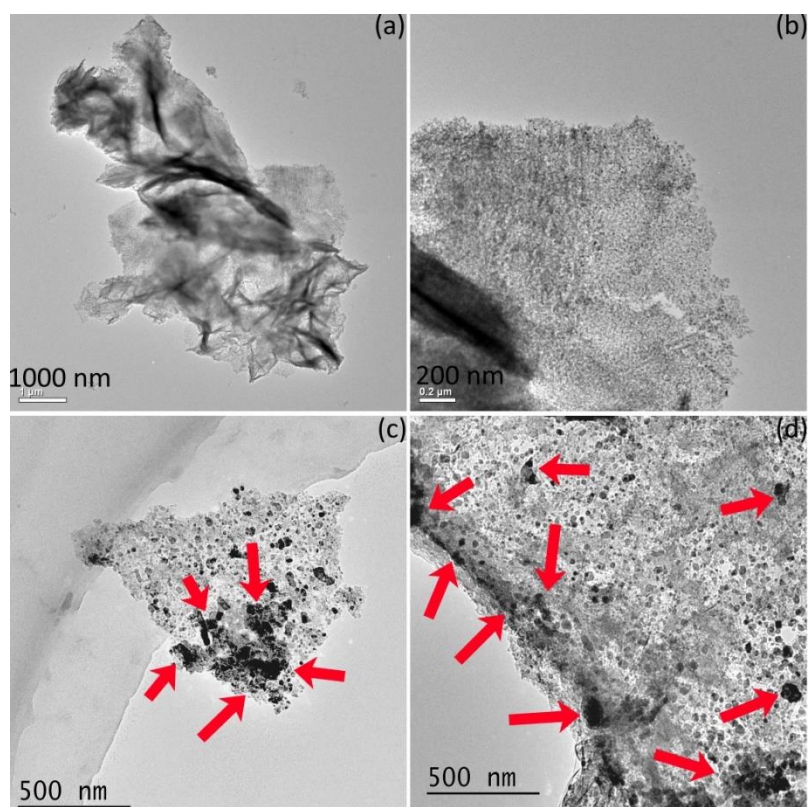


Fig. S3 TEM images of **a, b** Ni/C and **c, d** CuNi/C nanosheets. Cu nanoparticles are pointed by red arrows.....

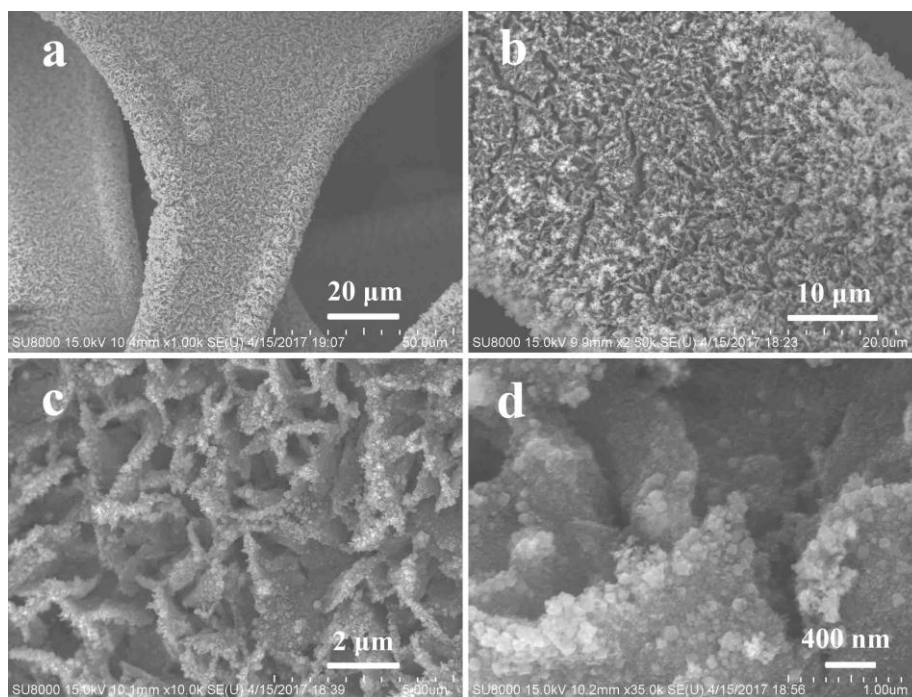


Fig. S4 SEM images of CuNi/C electrodes prepared by depositing Cu with 20 s

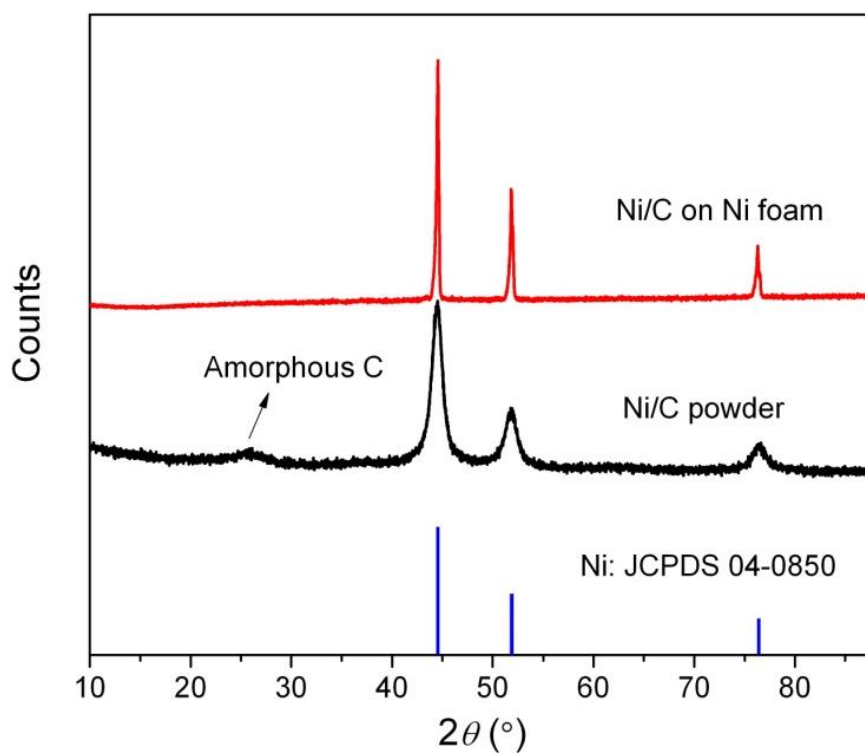


Fig. S5 XRD patterns of Ni/C on Ni foam and Ni/C powder

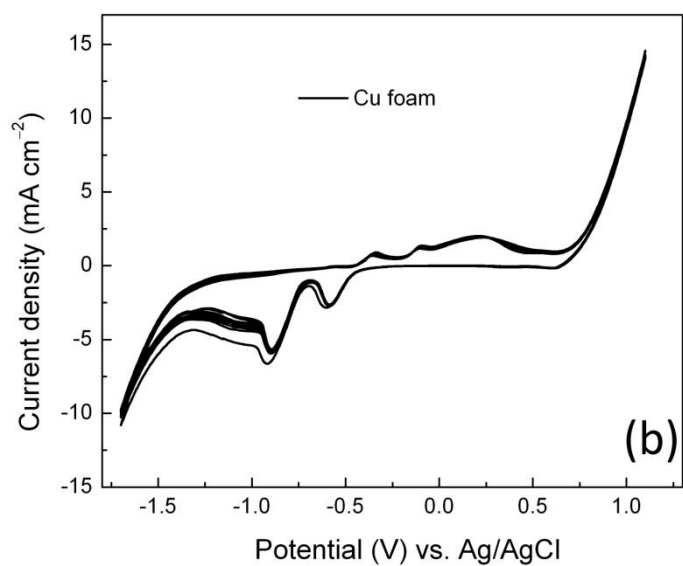
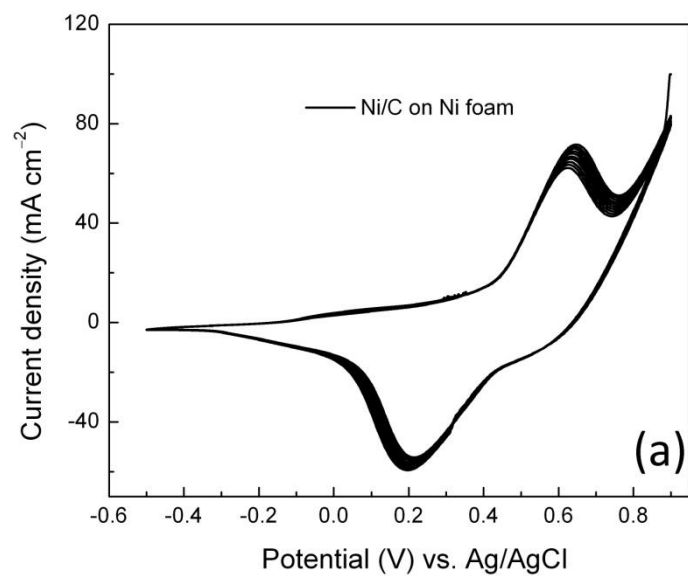


Fig. S6 CV curves of **a** Ni/C on Ni foam and **b** raw Cu foam in 0.1 M NaOH. The CV measurements were carried out in a three-electrode system using Pt foil as counter electrode, an Ag/AgCl as reference electrode. The scan rate is 20 mV s^{-1} .

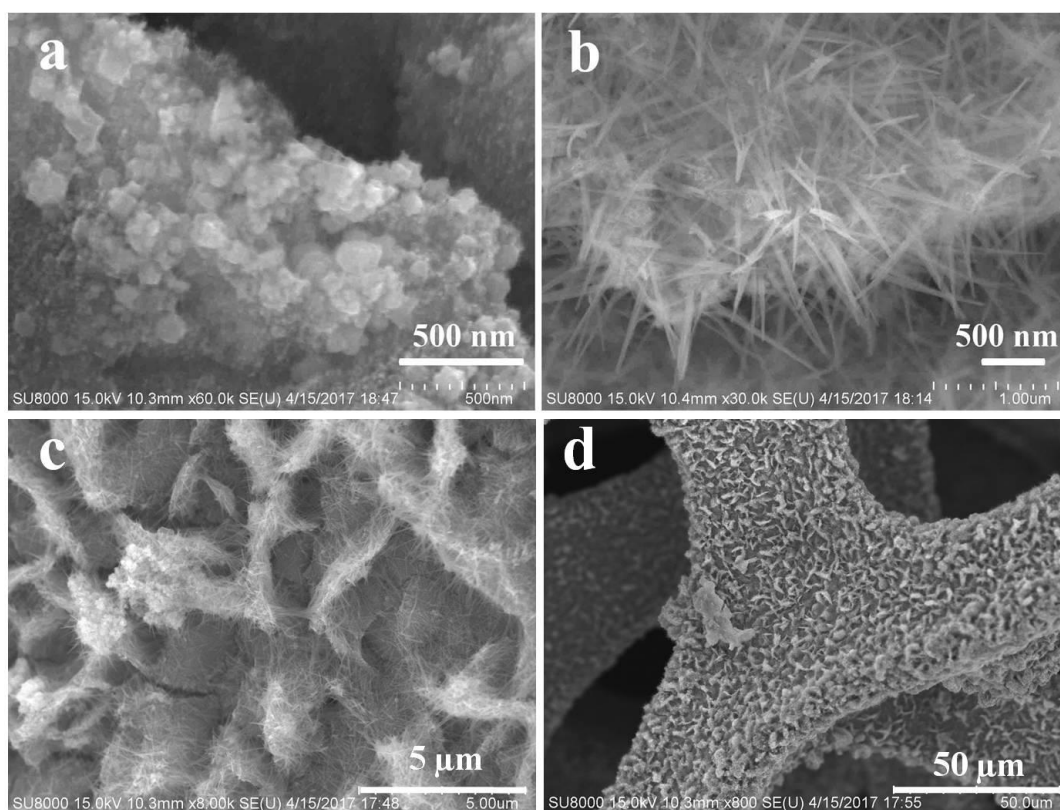


Fig. S7 SEM images of CuNi/C electrode **a** before and **b, c, d** after activation

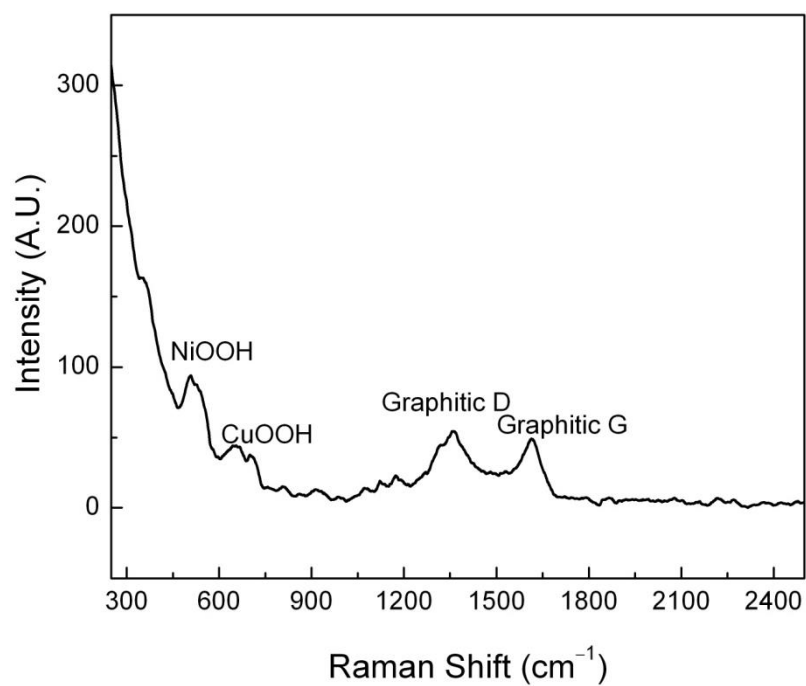


Fig. S8 Raman spectra of activated CuNi/C electrodes

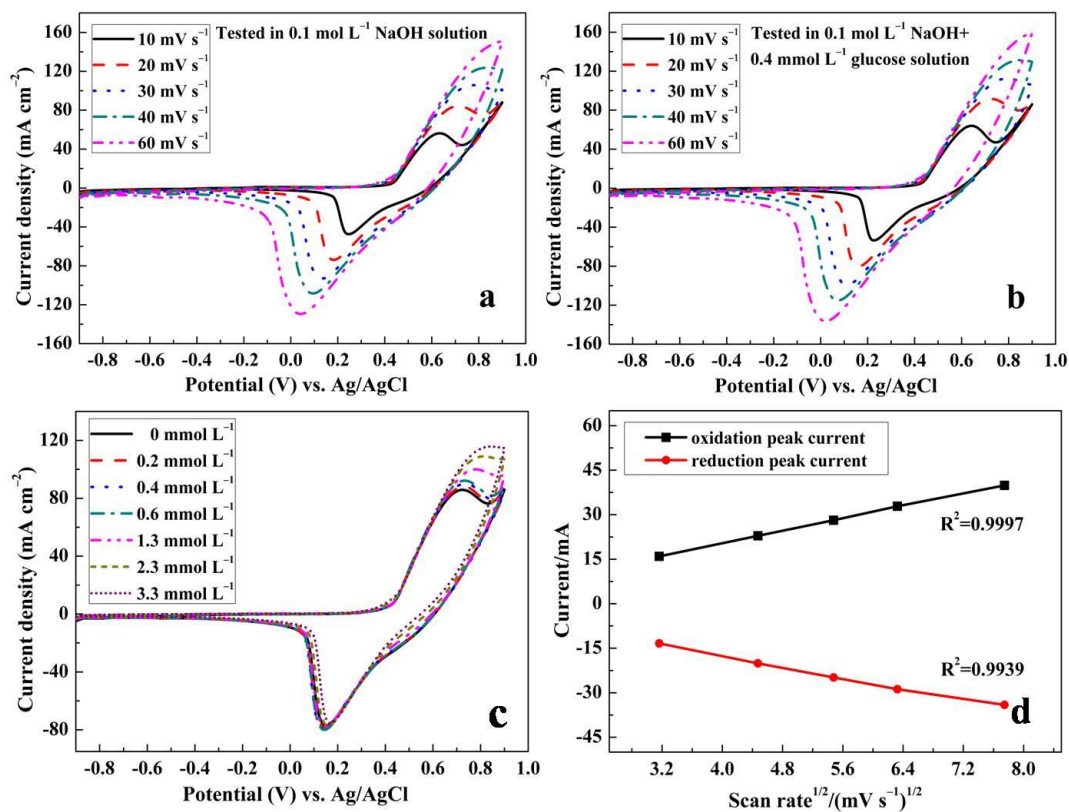


Fig. S9 CV curves of activated CuNi/C electrodes with various scan rates in **a** 0.1 M NaOH and **b** 0.1 M NaOH + 0.4 mM glucose. **c** CV curves in 0.1 M NaOH with various concentrations of glucose at a scan rate of 20 mV s⁻¹. **d** Linear plots of peak currents versus the square root of the scan rates

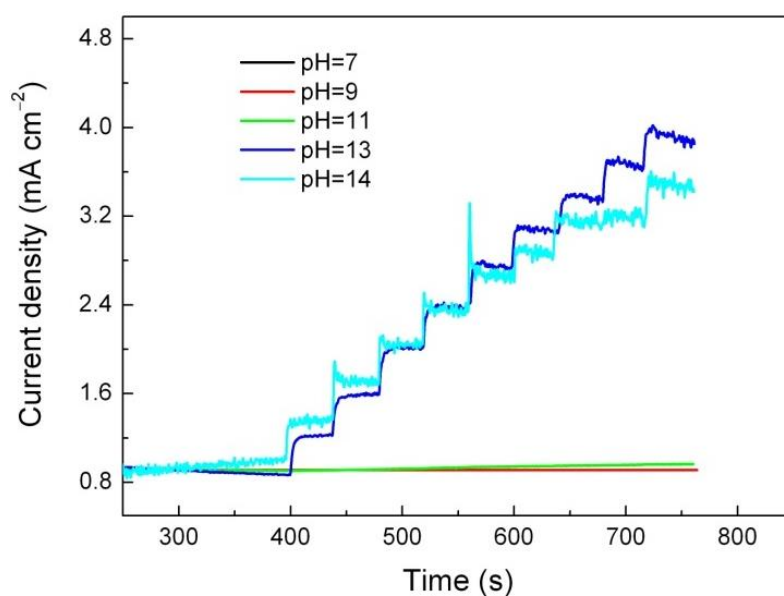


Fig. S10 Amperometric responses of CuNi/C on the consecutive addition of 20 μM glucose into NaOH solution with different concentrations at 0.54 V

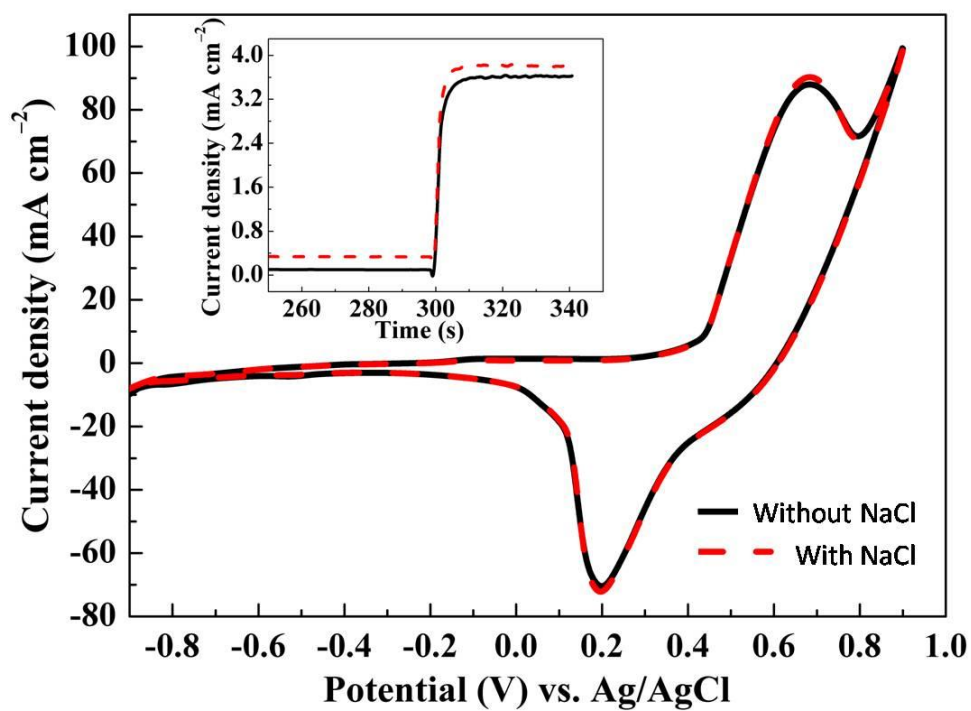


Fig. S11 CVs of the CuNi/C electrodes containing 0.2 mM glucose with and without 20 mM NaCl in 0.1 M NaOH solution, the inset is the corresponding amperometric responses

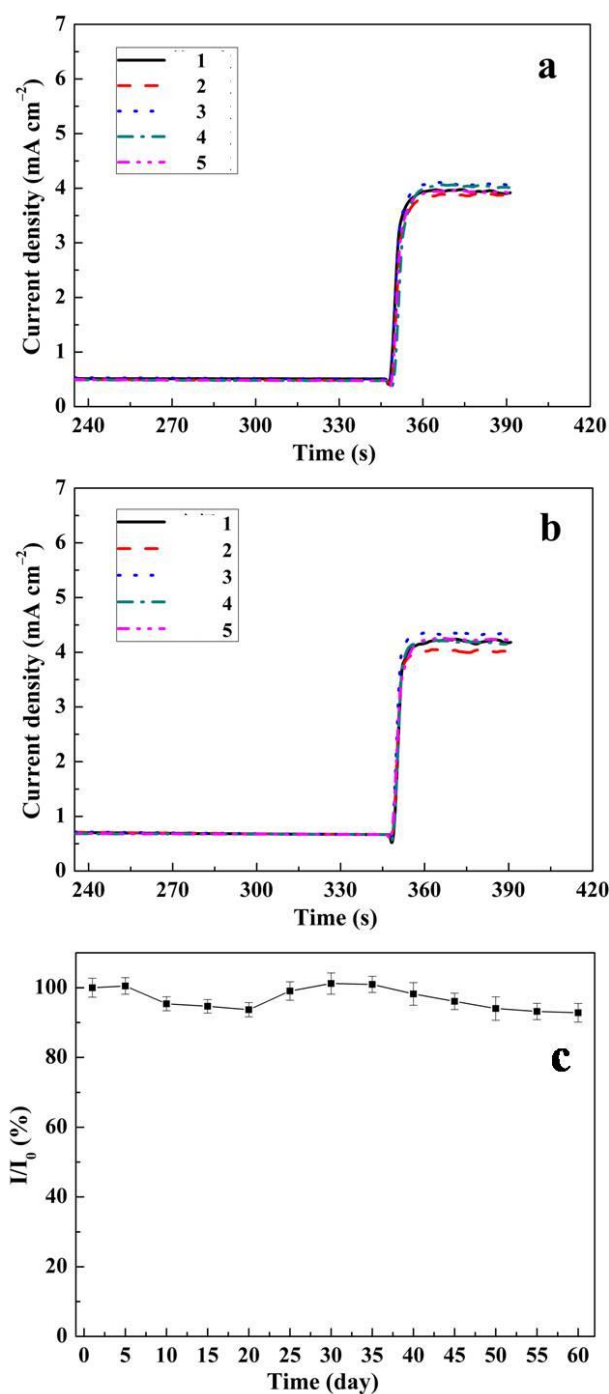


Fig. S12 **a** Amperometric responses of an electrode to the addition of 0.2 mM glucose solution for respective five times. **b** Amperometric responses of five electrodes fabricated on the same condition to the addition of 0.2 mM glucose solution. **c** Long-term stability test of CuNi/C electrodes stored at room temperature over a 60-day period

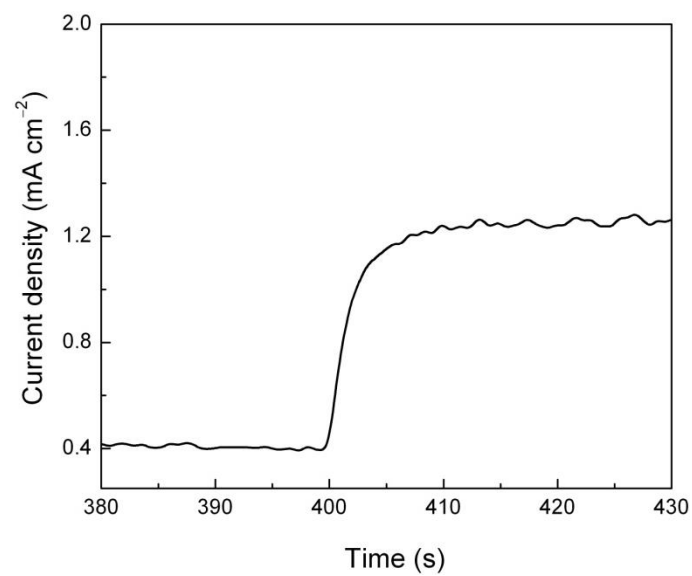


Fig. S13 Amperometric response of CuNi/C electrodes upon serum sample 1 at 0.54V