Ni-based metal-organic framework derived Ni@C nanosheets on Ni foam substrate as a supersensitive non-enzymatic glucose sensor

Li Zhang, Yaru Ding, Ranran Li, Chen Ye, Guangyu Zhao, Yan Wang*

School of Chemistry and Chemical Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, 150080, PR China

Corresponding author: wangy_msn@hit.edu.cn, +86 451 86403719

Fig. S1 Raman spectra of the prepared Ni@C powder sample
Fig. S2 (a) N$_2$ adsorption and desorption isotherms of Ni@C powder; (b) Pore size distributions of Ni@C powder.

Fig. S3 Cyclic voltammograms (CV) (a) at different cycles with a scan rate of 20 mV s$^{-1}$ in the absence of glucose; (b) at different scanning rate ranging from 10 mV s$^{-1}$ to 60 mV s$^{-1}$ with addition of 0.2 mM glucose (Inset: linear plots of peak currents versus the square root of the scan rates);
Fig. S4 CVs of the Ni@C/Ni foam 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. S5 (a) Amperometric responses of an electrode to the addition of 0.1 mM glucose solution for respective five times; (b) Amperometric responses of five electrodes fabricated on the same condition to the addition of 0.1 mM glucose solution; (c) long-term stability test of Ni@C/Ni foam electrodes stored at room temperature over a 21-day period.