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Supplementary Materials

Porous Carbon Boosted Non-Enzymatic Glutamate Detection with Ultra-High Sensitivity in Broad Range Using Cu Ions

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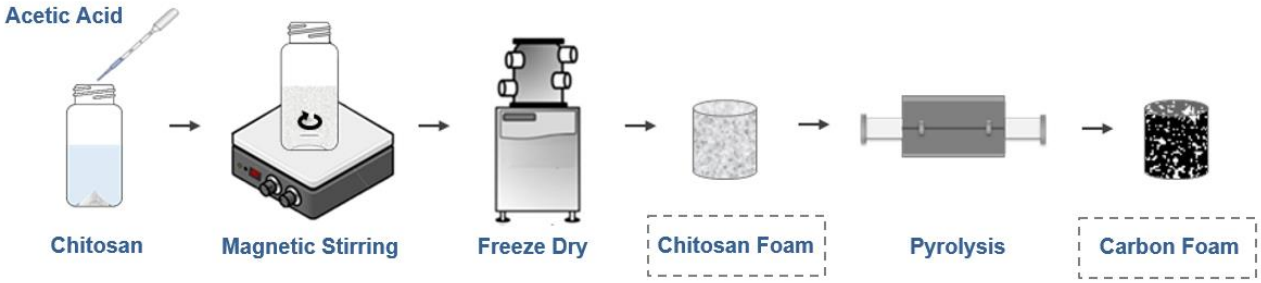

Figure S1. Scheme of the synthesis process of chitosan-derived graphitic carbon foams.

Table S1. EIS data collected from the carbon foam electrode and gold electrode: R_{et}, C, and S_A represent the electron-transfer resistance, the double layer capacitance, and the surface area, respectively.

Electrode	R_{et} (Ω/cm²)	C(×10⁻⁶ F/g)	S_A (cm²/g)
Carbon electrode	0.003388	233.1	11.66
Gold electrode	3.463	19.5	0.98

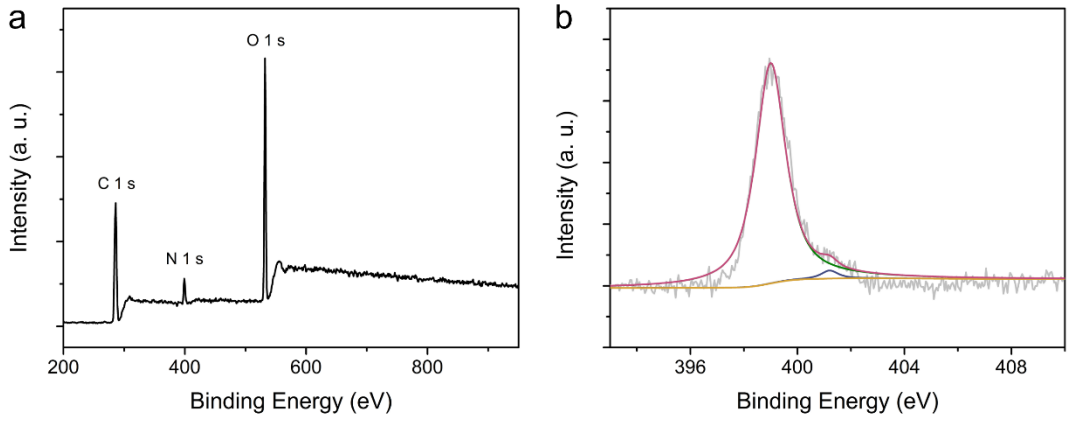

Figure S2. XPS wide scan spectrum (**a**) and deconvoluted spectra of N 1 s (**b**) of chitosan foam.

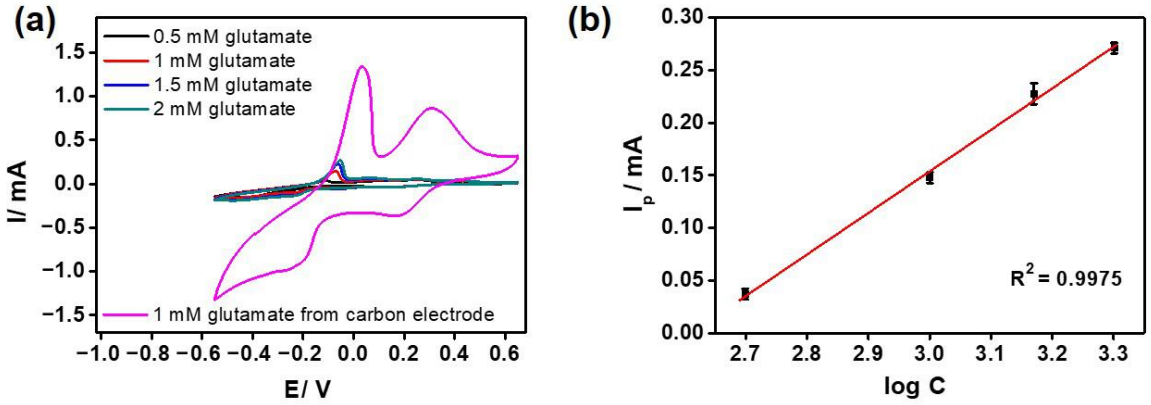

Figure S3. (**a**) Cyclic voltammograms of flat gold electrode for the detection of different concentrations of glutamates (0.5 mM, 1 mM, 1.5 mM, and 2 mM) and carbon electrode for the detection of 1 mM glutamate in 10 mM PBS containing 4 mM $CuCl_2$. The scan rate is 20 mV/s; (**b**) Calibration curve of peak currents of anodic peak in (**a**) vs. log C.

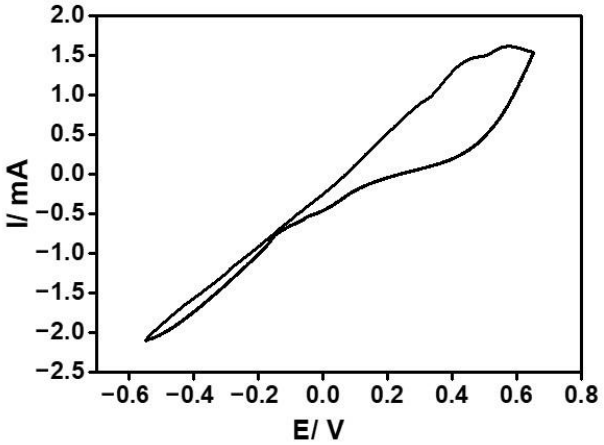

Figure S4. CV curve of the 4 mM $CuCl_2$ aqueous solution measured using the carbon foam electrode.

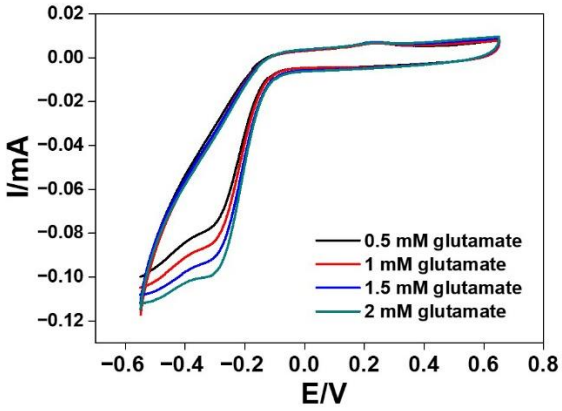

Figure S5. Cyclic voltammograms of carbon foam electrode for the detection the different concentrations of glutamates (0.5 mM, 1 mM, 1.5 mM and 2 mM) in 10 mM PBS without $CuCl_2$.

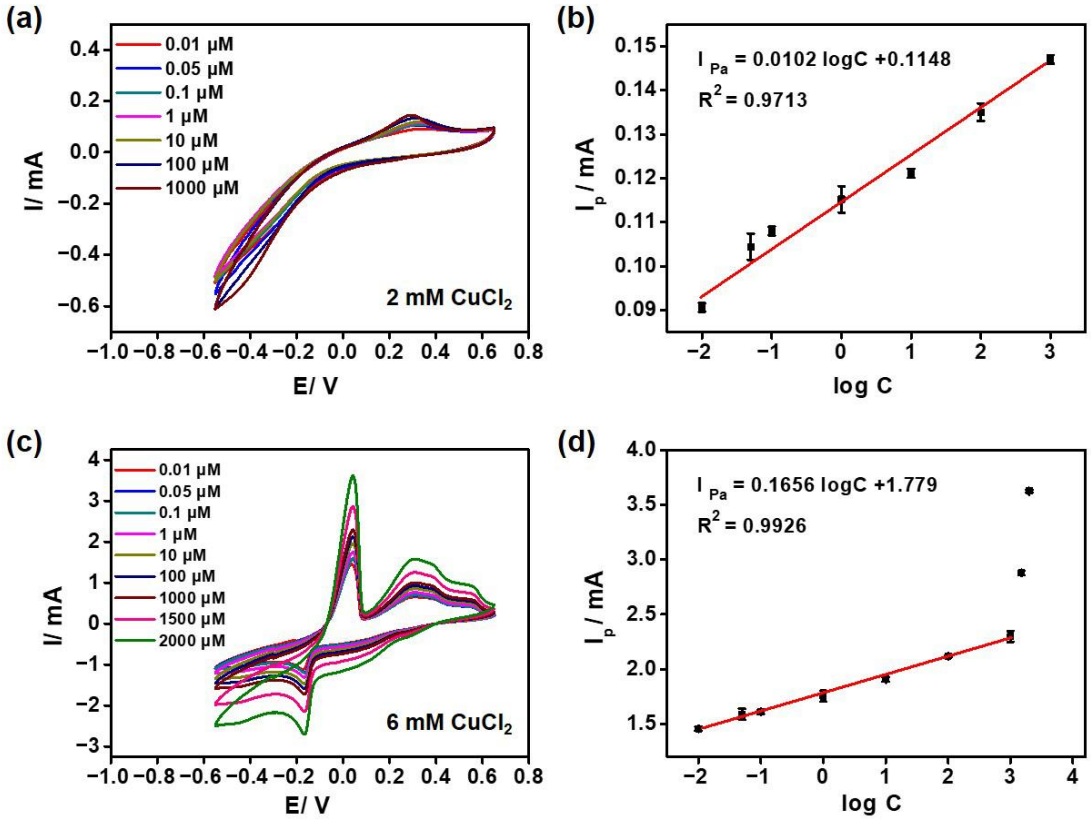

Figure S6. (**a**) Cyclic voltammograms of carbon based electrode for the detection the different concentrations of glutamates in 10 mM PBS containing 2 mM $CuCl_2$; (**b**) Calibration curve of I_p vs. log C of anodic peak in (**a**); (**c**), Cyclic voltammograms of carbon based electrode for the detection the different concentrations of glutamates in 10 mM PBS containing 6 mM $CuCl_2$; (**d**) Calibration curve of I_p vs. log C of anodic peak 1 in (**c**).