SUPPLEMENTARY MATERIAL

A Novel Electrochemiluminescence Sensor for Sensitive Determination of Carbaryl Based on Solid Phase Microextraction at NH₂-graphene-Nafion Modified Electrode

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A.



Fig. SM-A. XRD patterns of GO and NH₂-graphene.



Fig. SM-B. The effect of buffer pH on ECL intensity in NaHCO₃–Na₂CO₃ buffer solution. Conditions: NaHCO₃–Na₂CO₃, 0.1 mol/L; luminol, 1×10^{-4} mol/L; scan rate, 100mV/s; the voltage of the PMT was set at 800 V.

C.



Fig. SM-C Effect of pH on the extraction efficiency. (A) Effect of pH on the ECL signal *I*; a, the initial ECL intensity, $b \rightarrow g$, the corresponding ECL intensity at pH 2, 4, 5, 7, 9 and 10 respectively. (B) Effect of pH on the ECL signal changes (ΔI); Conditions: NaHCO₃–Na₂CO₃, 0.1 mol/L, pH=11; luminol, 1×10⁻⁴ mol/L; scan rate, 100 mV/s; the voltage of the PMT was set at 800 V.



Fig. SM-D Effect of extraction time on the extraction efficiency. (A) Effect of extraction time on the ECL signal *I*; a, the initial ECL intensity, b \rightarrow h, the corresponding ECL intensity at extraction time 1, 3, 5, 7, 8, 10 and 12 min respectively. (B) Effect of extraction time on the ECL signal changes (ΔI); Conditions: NaHCO₃–Na₂CO₃, 0.1 mol/L, pH=11; luminol, 1×10⁻⁴ mol/L; scan rate, 100 mV/s; the voltage of the PMT was set at 800 V.