Supporting Material

Electrogenerated chemiluminescent resonance energy transfer between luminol and MnO_2 nanosheets decorated with Cu_2O nanoparticles for sensitive detection of RNase H

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1. Pretreatment of glassy carbon electrode

Prior to modification, a glassy carbon electrode (GCE, 3 mm in diameter) was polished with 0.05 μm Al_2O_3 suspension to a mirror, and cleaned thoroughly in an ultrasonic cleaner with alcohol and water for 30 s, respectively. The polished GCE was further cleaned in 1 mM $K_3Fe(CN)_6$ solution between -0.20 and 0.60 V (vs SCE) at a potential scan rate of 100 mV s^{-1} until a pair of reversible peaks was obtained, indicating that the electrode surface was cleaned.

2. ECL and electrochemical measurement

ECL measurements were performed with a model MPI-M electrochemiluminescence analyzer (Xi'An Remax Electronic Science & Technology Co. Ltd., China) at room temperature, applying the potential from 0 V to 1.5 V with the scanning rate of 100 mV s^{-1}, and the photomultiplier high voltage was set at 800 V during the detection. Electrochemical experiments were carried out on a CHI 760D electrochemical workstation (CH Instruments Co., China). In this work, there was a conventional three-electrode system, in which a modified GCE was used as the working electrode, a platinum wire was applied as the counter electrode and an SCE was utilized as the reference electrode, respectively.
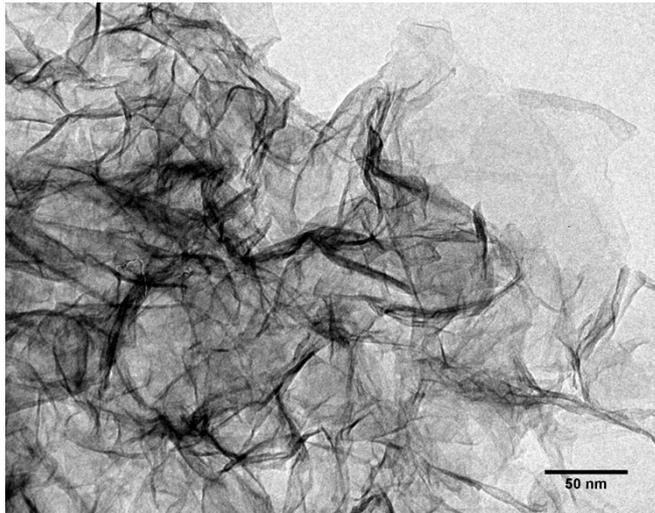
Fig.S1 TEM image of MnO2 nanosheets
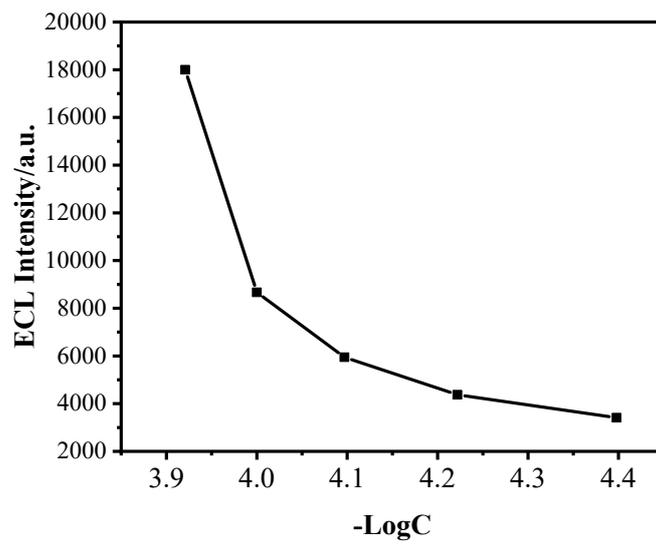
Fig.S2 Effect of luminol concentration on ECL intensity
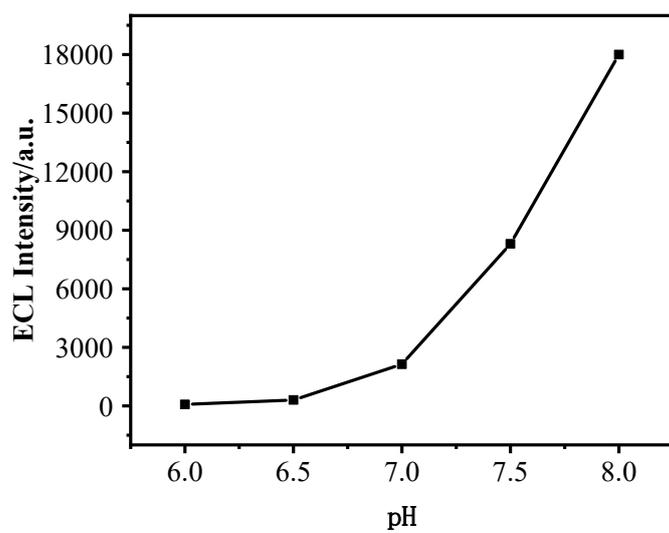
Fig.S3 Effect pH values on luminol ECL
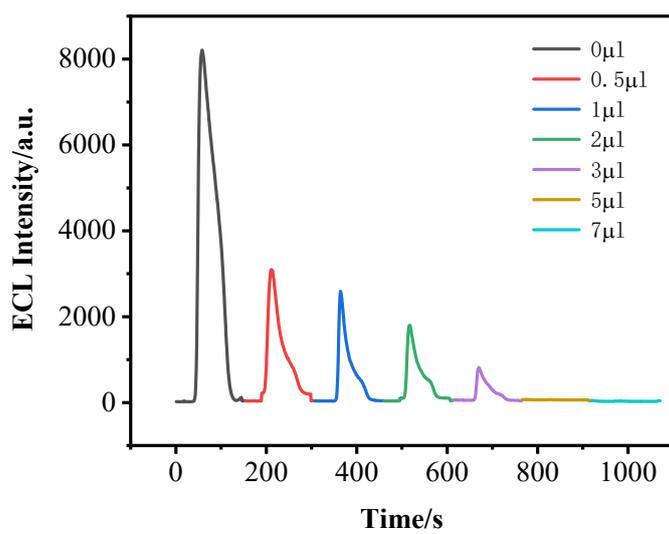
Fig.S4 Effect of modified amount of $Cu_2O@MnO_2$ suspension on luminol ECL