Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Fabrication of Single Pt@Au Nanowire Electrodes for Monitoring Hydrogen Peroxide Released from Living Cells

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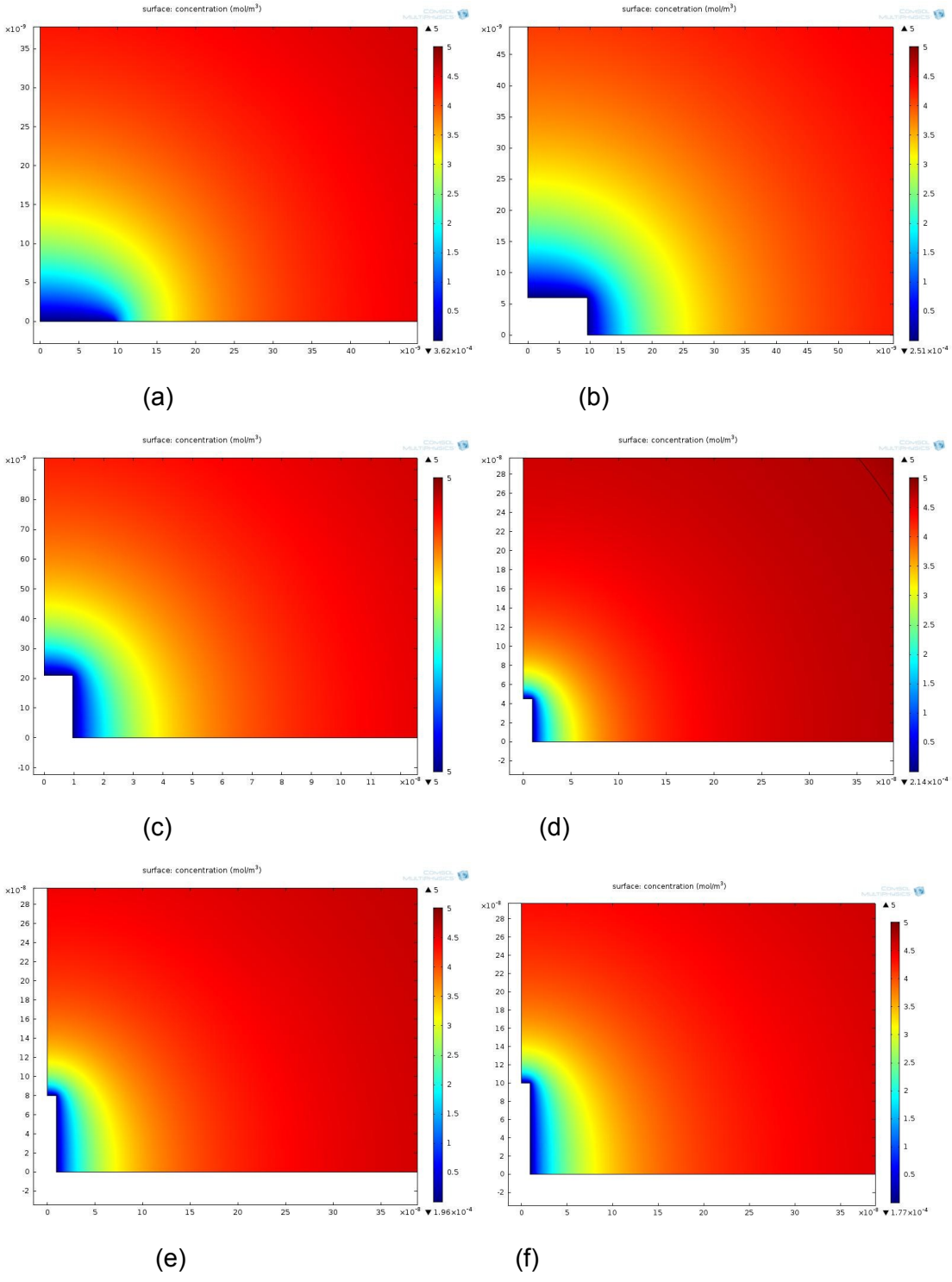

Figure S1. The simulation results of 5 mM Fc diffusion on the surface of Au nanowire electrodes with different wire length (a, 0 nm; b, 6 nm; c, 21 nm; d, 45 nm; e, 80 nm; f,100 nm)

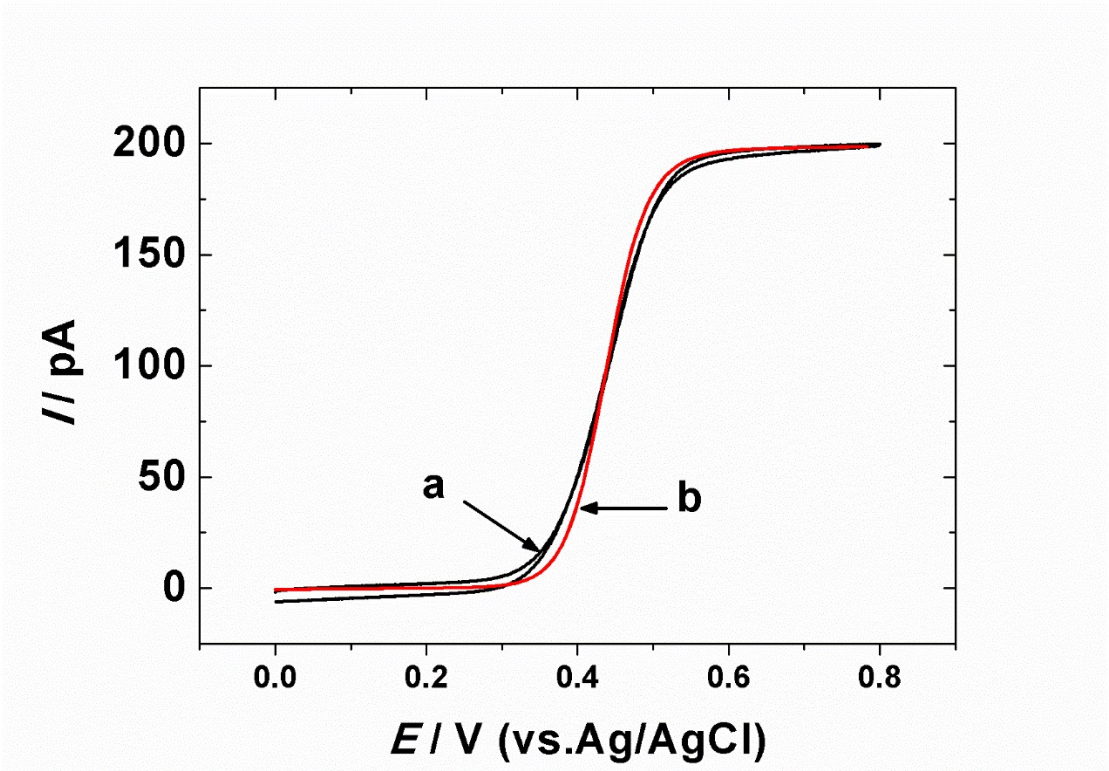

Figure S2. (a) Voltammetric responses of Au nanowire electrodes in a ACN solution containing 0.2 M $TBAPF_6$. Radius: 7 nm,Length:71 nm ;Scan rate is 20 mV/s. (b) The simulation result of Fc diffusion on the surface of Au nanowire electrode.

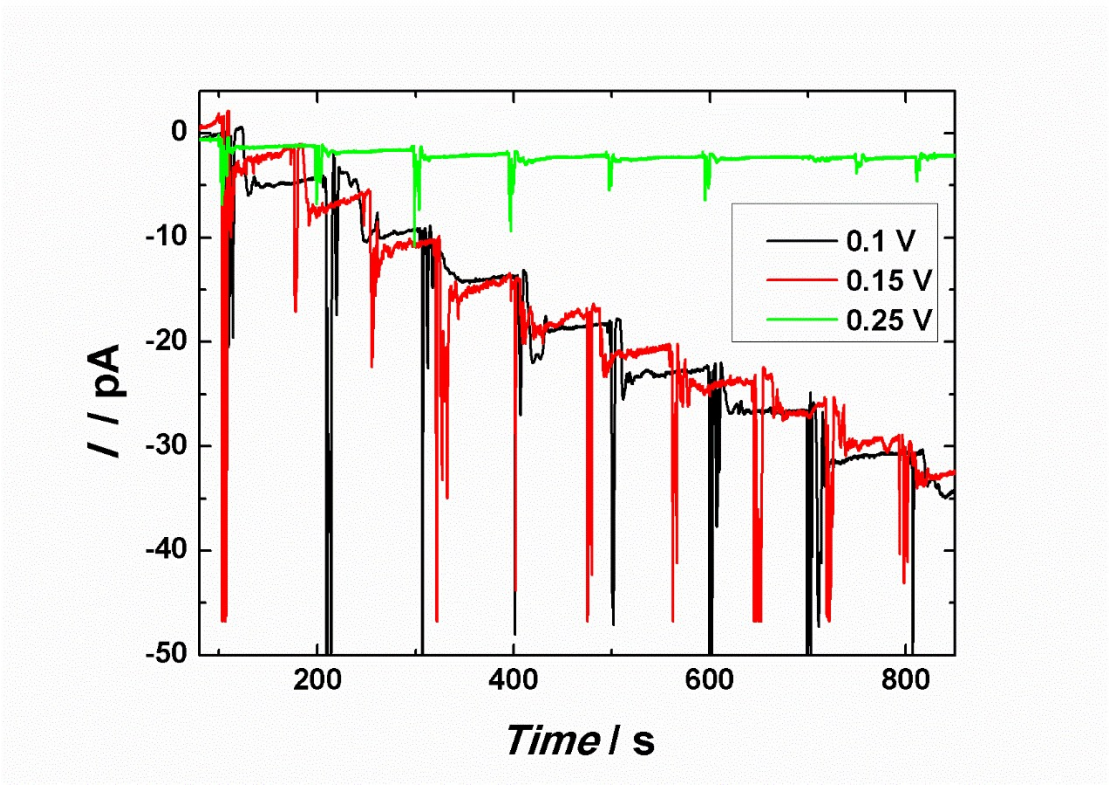

Figure S3. Amperometric responses of the single Pt@AuNWE to the successive additions of 4 μM H_2O_2 into 10 mM the stirring PBS (pH= 7.4) at the applied potential of 0.1 V, 0.15 V, 0.25V, respectively. Radius of the nanoelectrode, ~10 nm; Length of the nanoelectrode, ~ 200 nm.

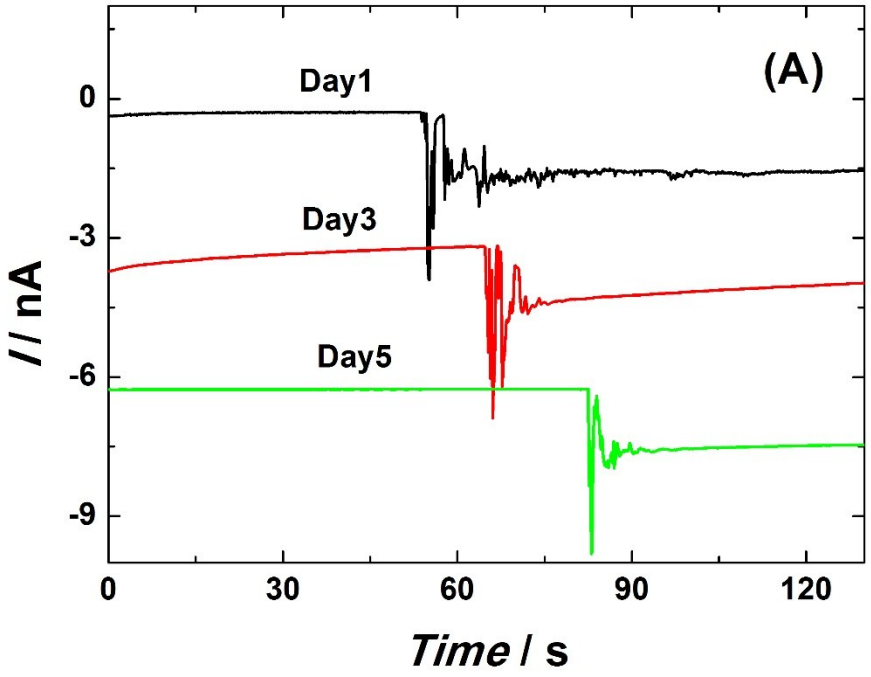

Figure S4. Amperometeric responses of single Pt@AuNWE for the detection of 10 μM H2O2 at day1, day3 and day5, respectively. Applied potential, 0.10 V; Radius of the nanoelectrode, ~10 nm; Length of the nanoelectrode, ~ 200 nm.

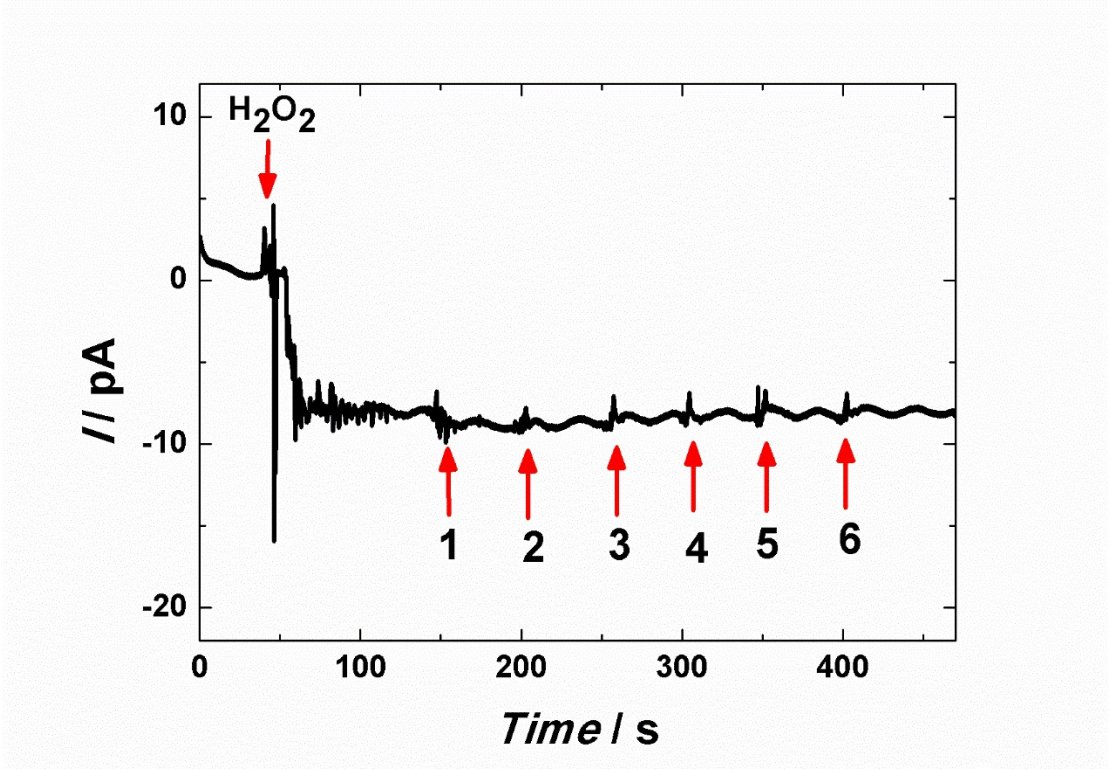

Figure S5. Amperometeric responses of single Pt@AuNWE for the detection of 10 μM H_2O_2 in the presence of 0.5 mM ascorbic acid (1), 0.1 mM dopamine (2), 1.0 mM glucose(3), 1.0 mM uric acid (4), 1.0 mM lysine (5), and 1.0 mM L-cysteine (6), respectively. Applied potential, 0.10 V; Radius of the nanoelectrode, ~10 nm; Length of the nanoelectrode, ~ 200 nm.