

Supporting Information for:

Micelle modified–carbon nanosphere enhanced chemiluminescence from reactive oxygen species for the detection of hydrogen peroxide

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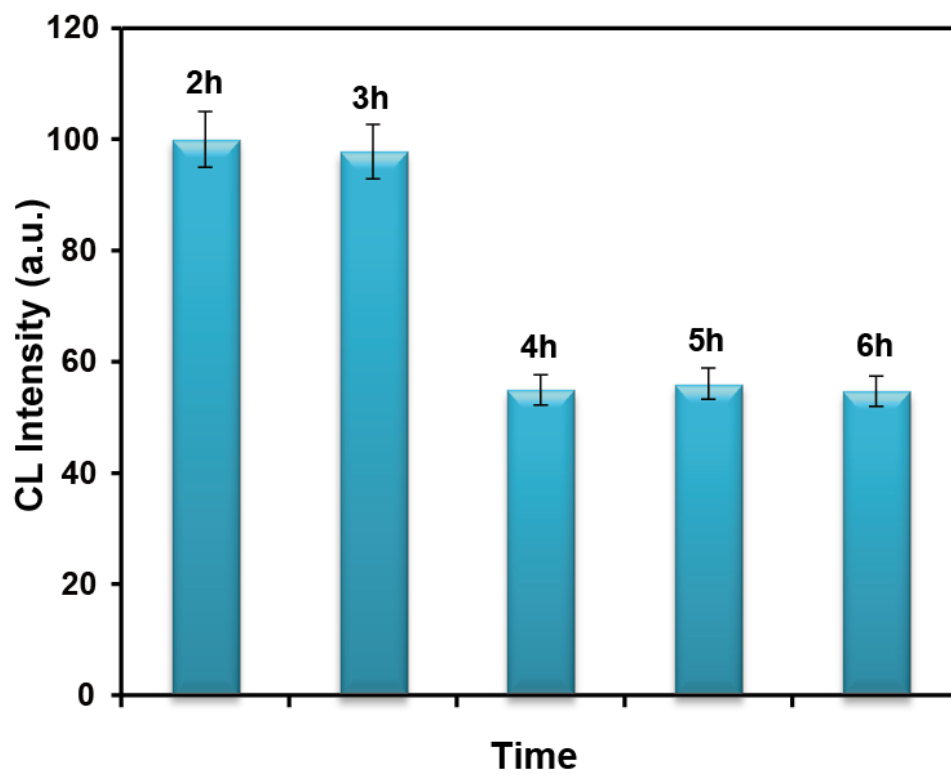


Fig. S1 Effect of the preparation time of CNS on the CL intensity of the $\text{Co(II)}\text{-H}_2\text{O}_2\text{-OH}^-$ system.

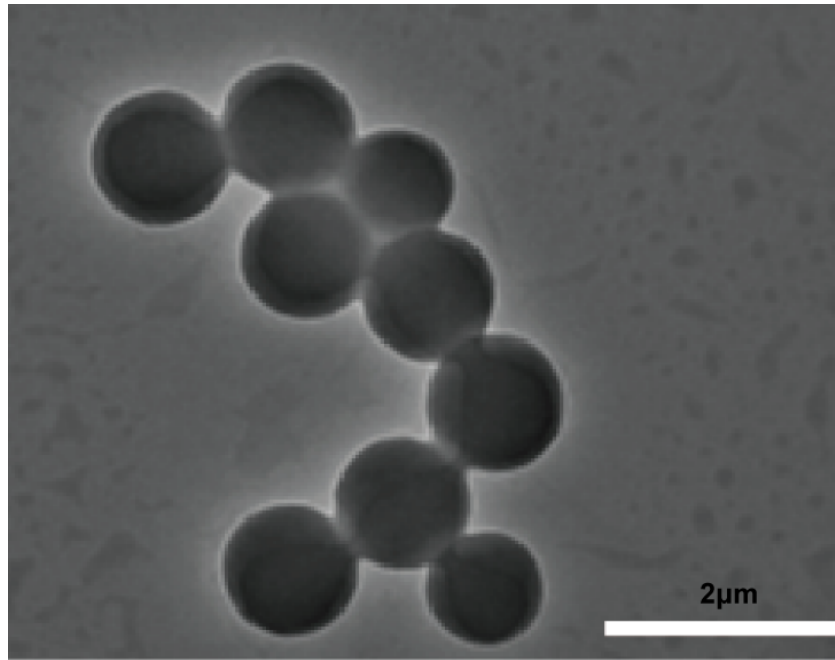


Fig. S2 TEM image of CNS.

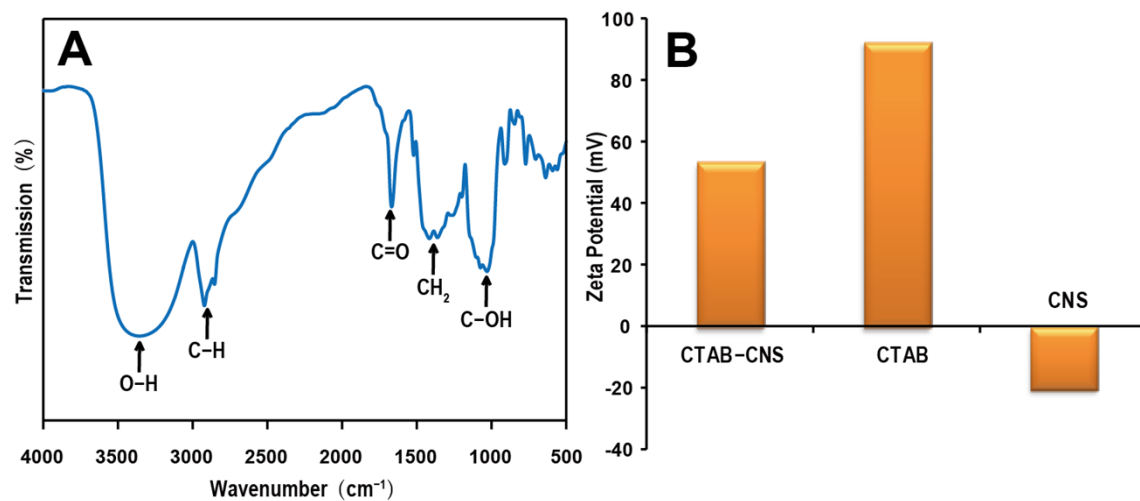


Fig. S3 (A) FTIR spectrum of the as-prepared CTAB-CNS; (B) Zeta potential measurements of CTAB-CNS, 4.0 mM CTAB and CNS, respectively.

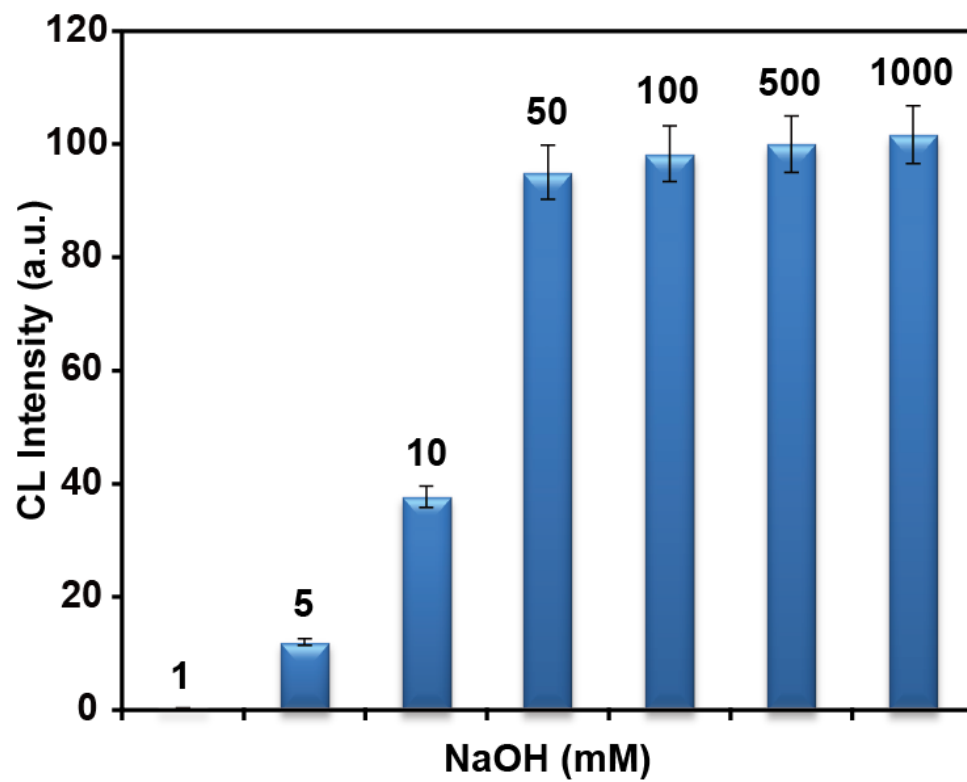


Fig. S4 Effect of NaOH on the CL intensity of the Co(II)-H₂O₂-OH⁻ system.

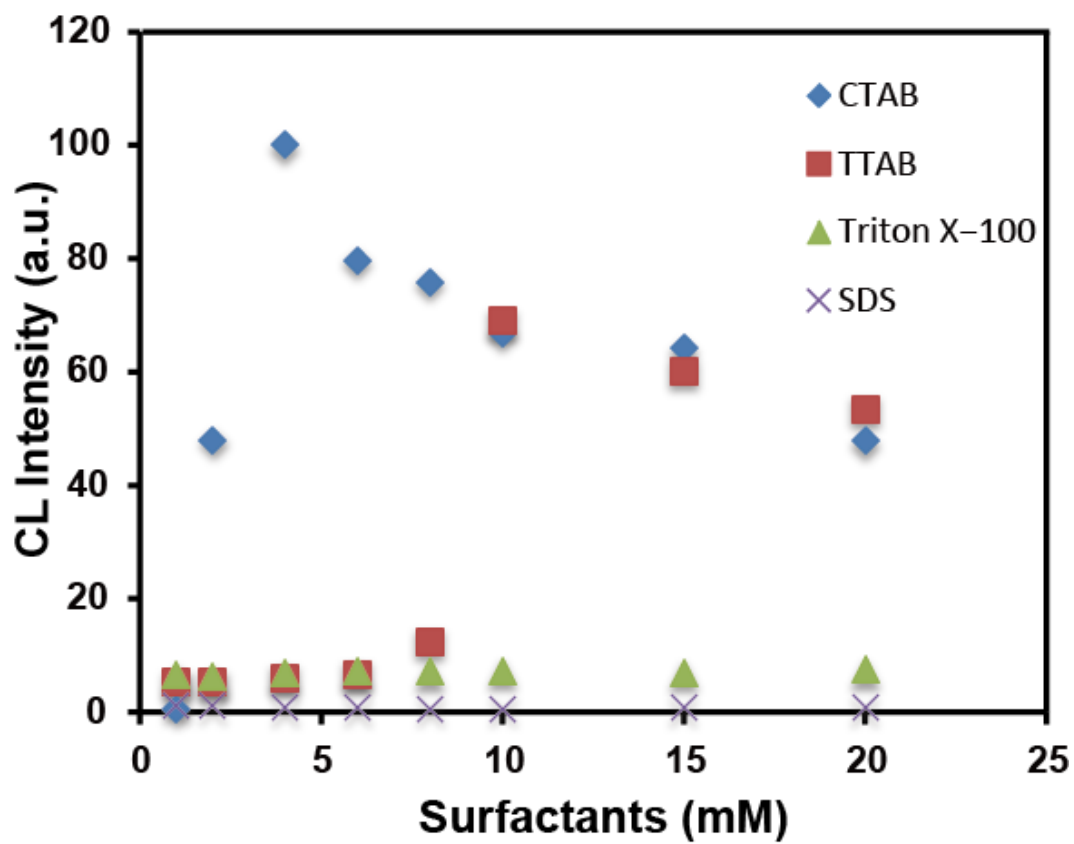


Fig. S5 Effect of CNS modified with CTAB, TTAB, SDS and Triton X-100 on CL intensity of the Co(II)-H₂O₂-OH⁻ system.

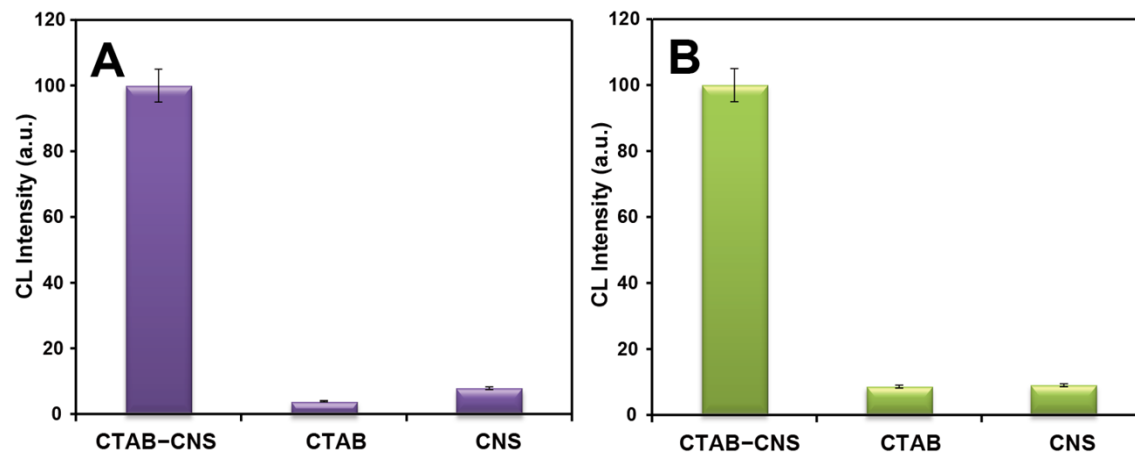


Fig. S6 (A) CL intensity of the ClO^- system in the presence of CTAB-CNS, 4 mM CTAB and CNS, respectively; (B) CL intensity of the ONOO^- system in the presence of CTAB-CNS, 4.0 mM CTAB and CNS, respectively.

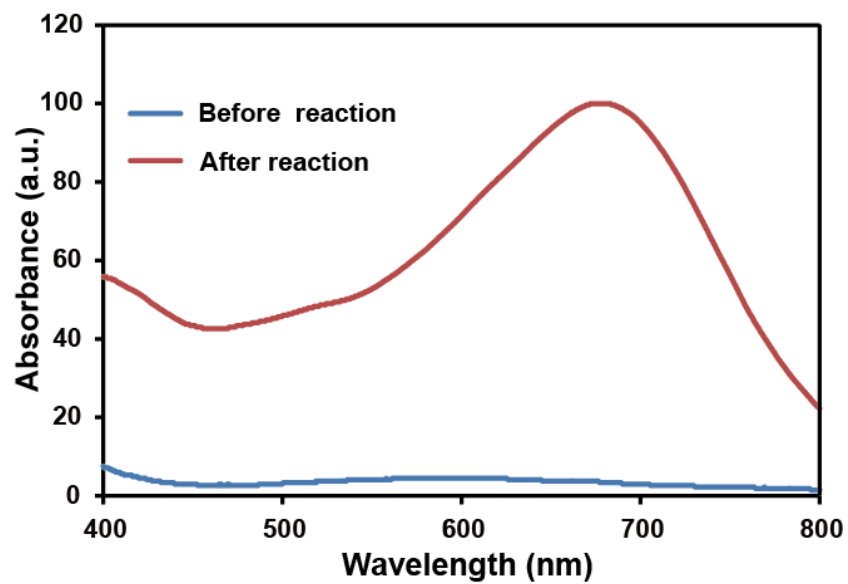


Fig. S7 Absorbance spectra of NBT in the absence or presence of the CTAB-CNS-Co(II)-H₂O₂-OH⁻ system.

Table S1 Tolerance limit of various coexistent substances on the determination of 50 μM H_2O_2

Species added	Maximum tolerance ratio of ion to H_2O_2 (molar ratio)
Na^+ , K^+ , Ba^{2+} , Ca^{2+} , Zn^{2+} , NH_4^+ , Cl^- , F^- , Br^- , NO_3^- , SO_4^{2-} , CH_3COO^-	100
Al^{3+} , Cd^{2+} , Fe^{3+} , Mg^{2+} , Ag^+	50
PO_4^{3-} , Mn^{2+}	10
Cu^{2+} , Fe^{2+} , ClO^-	5

Table S2 Effects of radical scavengers on CTAB–CNS–Co(II) –H₂O₂–OH[–] system^a

Radical scavengers	Concentration (mM)	CL intensity ^b
H ₂ O		100
NaN ₃	1.0mM	100
NBT	10mM	21
Thiourea	50mM	44
Ascorbic acid	0.1mM	27

^a 0.05M H₂O₂, 0.05M NaOH, CTAB–CNS, 0.1 mM Co(II). The volume of CTAB–CNS, NaOH or H₂O₂ was 100 μL. The volume of Co(II) was 5 μL.

^b All of the results were the mean of three determinations.