

A fluorescence “turn-on” probe for respective ratiometric detection of hypochlorite and cysteine

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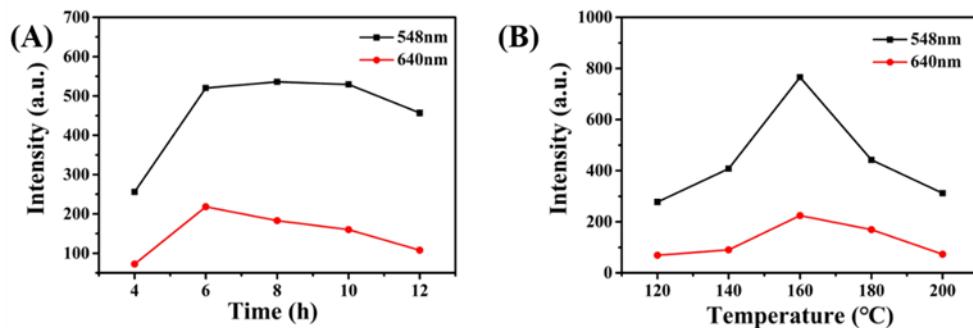


Figure S1 Normalized fluorescence intensity of N-CDs prepared under different reaction time (A) and temperature (B).

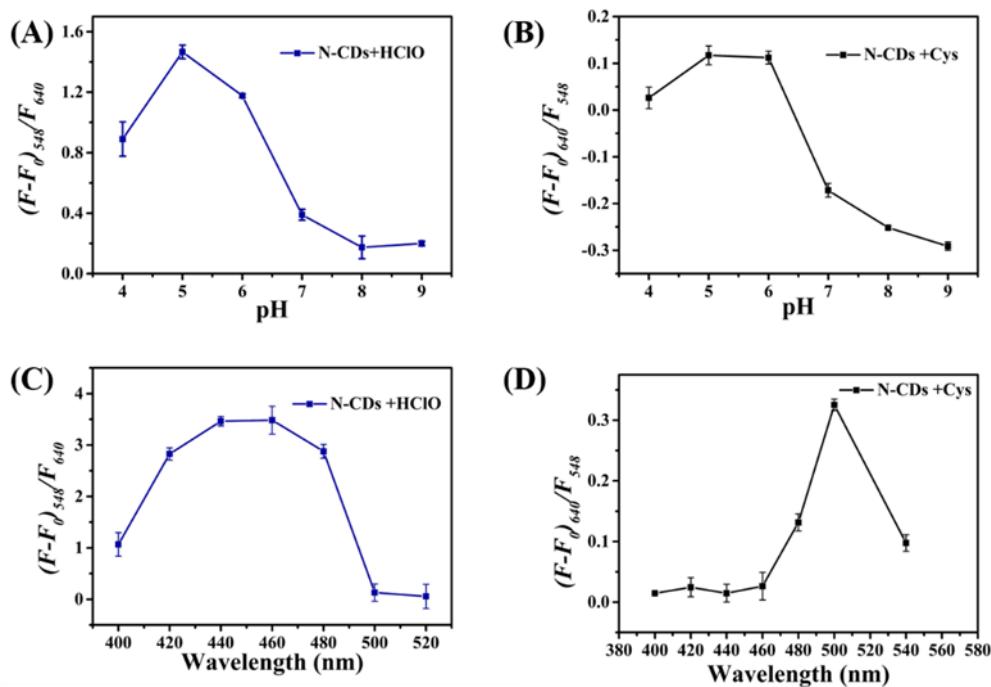


Figure S2 Fluorescence enhancement efficiency of HClO (A) and Cys (B) on N-CDs under different pH conditions and fluorescence enhancement efficiency of HClO (C) and Cys (D) on N-CDs under different excitation wavelengths.

Figure S3 High resolution XPS spectra of (A) C1s, (B) N1s and (C) O1s of N-CDs.

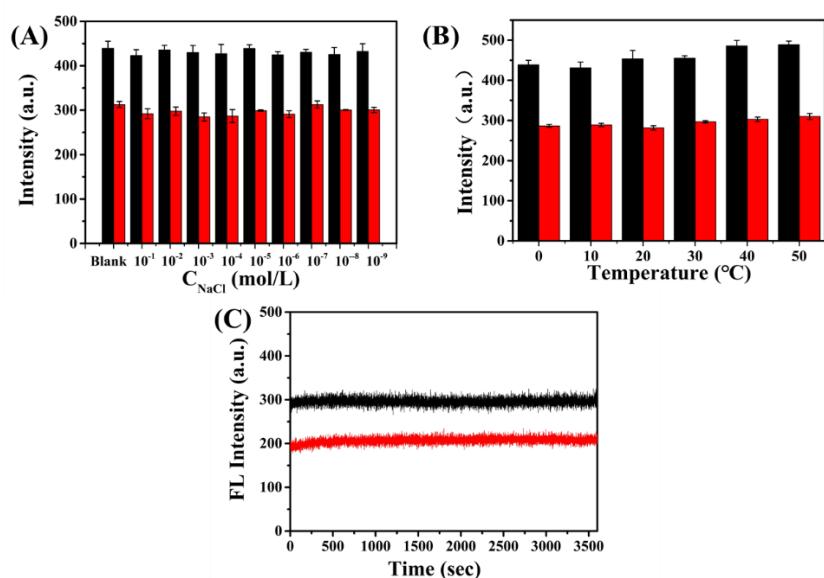


Figure S4 FL intensity variation of the N-CDs as a function of (A) concentration of NaCl; (B) Temperature; (C) Irradiation time (black signal corresponding to $\lambda_{\text{em}} = 548 \text{ nm}$, red signal corresponding to $\lambda_{\text{em}} = 640 \text{ nm}$)

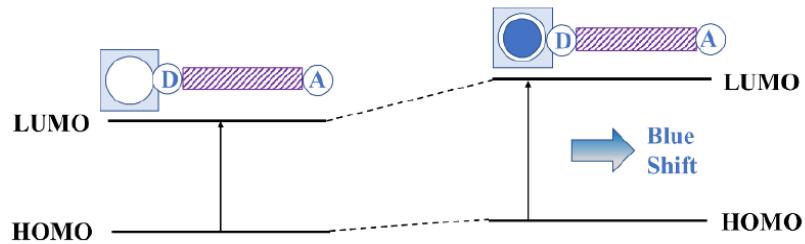


Figure S5 Schematic diagram of fluorescent ICT mechanism recognition process.

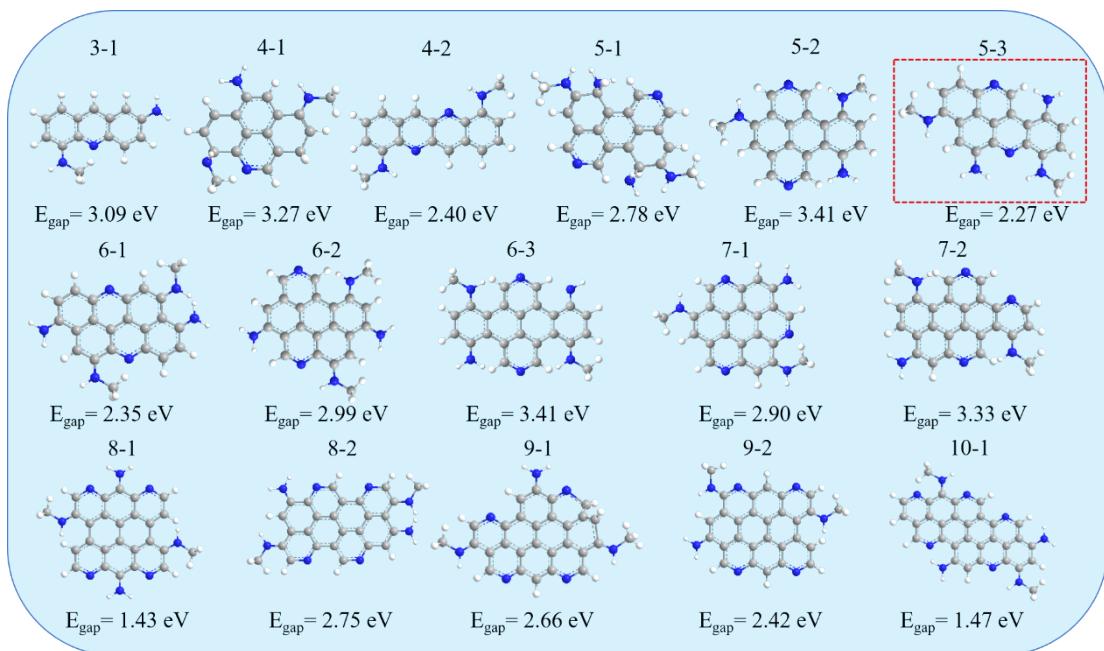


Figure S6 Density functional theory calculations related to molecular structure of N-CDs and optimized structures ranging from 3 to 10 polyaromatic rings.

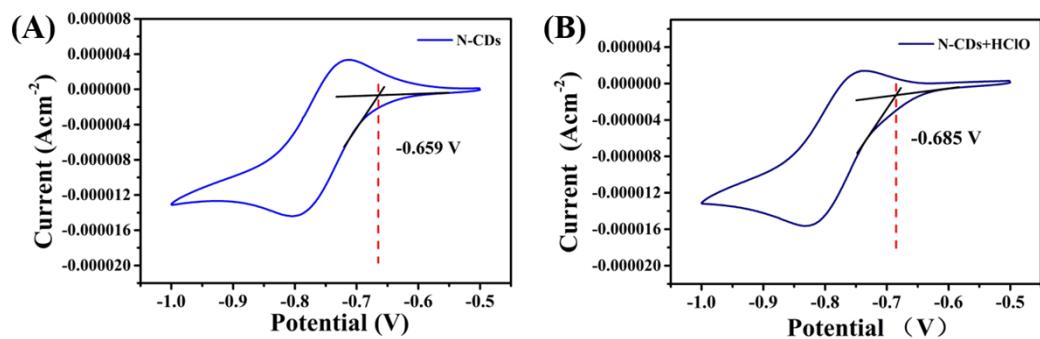


Figure S7 (A) Cyclic voltammograms of N-CDs (solvent: newly dried N, N-dimethylformamide); (B) The cyclic voltammetry of N-CDs after the addition of HClO (solvent: newly dried N, N-dimethylformamide)

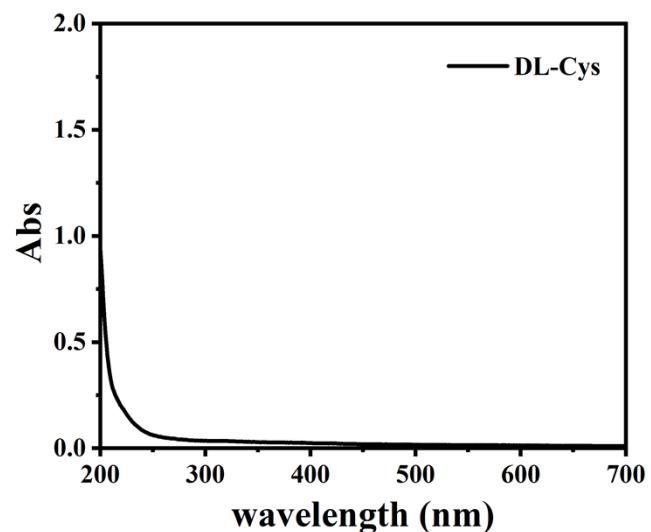


Figure S8 UV-Vis spectrum of Cys.

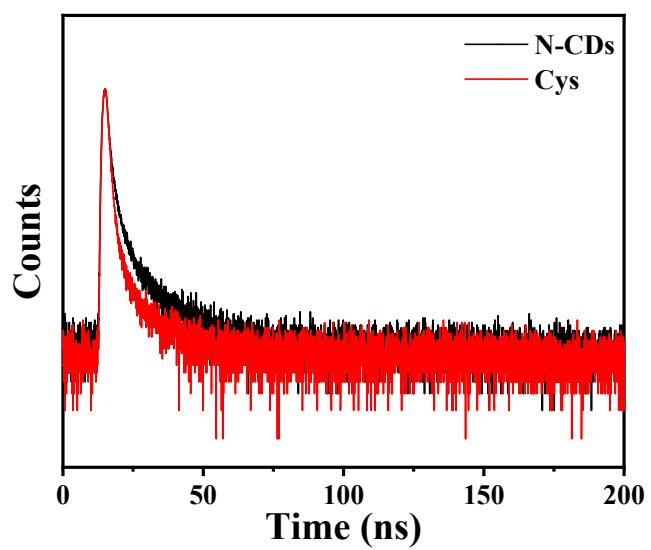


Figure S9 Fluorescence decay curve of N-CDs before (black line) and after the addition of Cys (red line)

Table 1 Detection results of HClO in serum samples by N-CDs.

Sample	Added Amount (μM)	Found Amount (μM)	Average Recovery (% , n=3)	RSD (% , n=3)
Serum	0.00	0.00	-	-
	180	186.75	103.75	2.59
	360	357.12	99.20	0.85
	720	720.14	100.01	0.31

Table 2 Detection results of Cys in serum samples by N-CDs.

Sample	Added Amount (μM)	Found Amount (μM)	Average Recovery (% , n=3)	RSD (% , n=3)
Serum	0.00	0.00	-	-
	180	184.86	102.70	2.12
	360	363.65	101.01	1.46
	720	717.12	99.60	1.85