Supporting Information for

Hydroquinone colorimetric sensing based on Core-shell structured $CoFe_2O_4$@N-GQDs@CeO_2 nanocomposites as oxidase mimics

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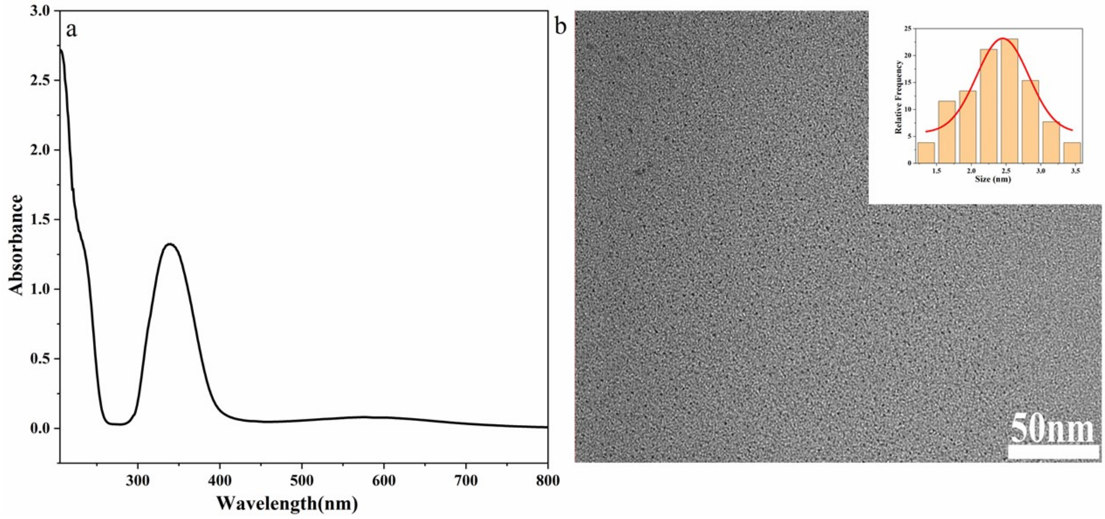

Figure S1 (a) UV-visible spectrum of N-GQDs; (b) TEM image of N-GQDs. Inset is the size distribution of N-GQDs.

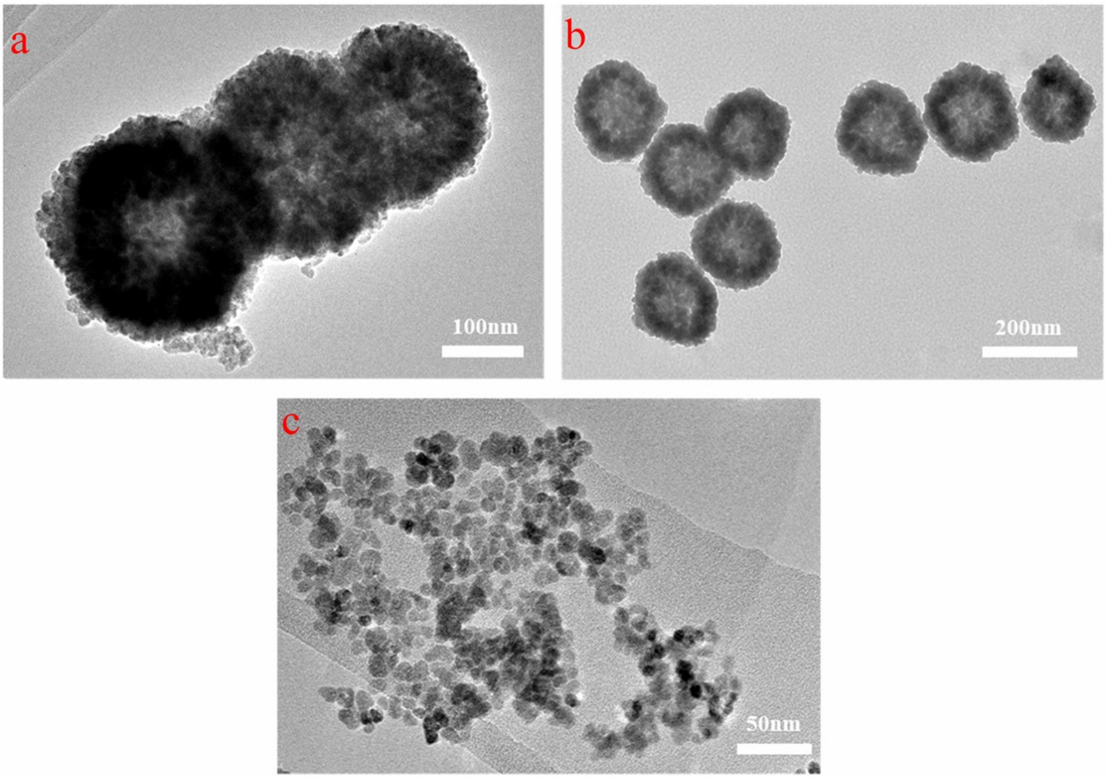

Figure S2 TEM images of (a) $CoFe_2O_4$, (b) $CoFe_2O_4$@N-GQDs, (c) 5 $CoFe_2O_4$@N-GQDs.

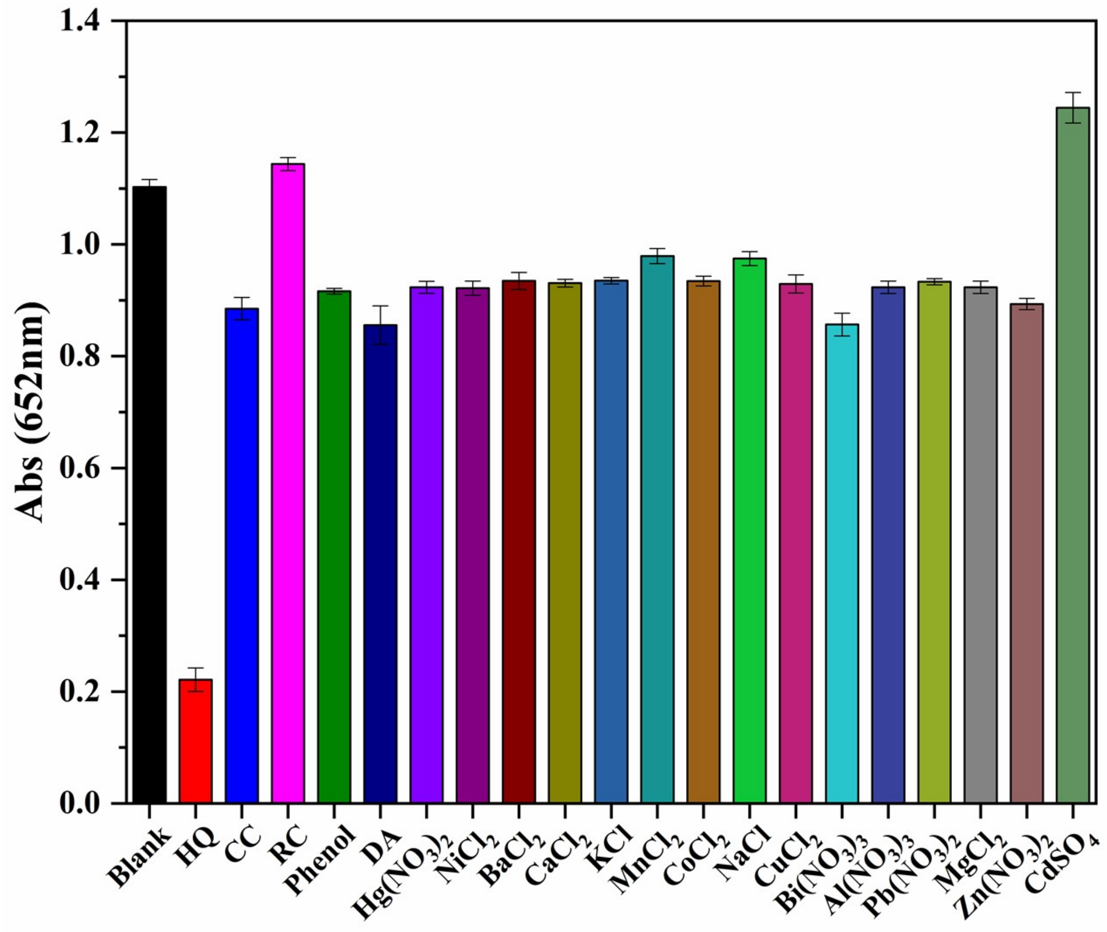

Figure S3 The $CoFe_2O_4$@N-GQDs@CeO_2-TMB system has the selectivity to detect HQ (40 μM) at 10 times the potential interference.

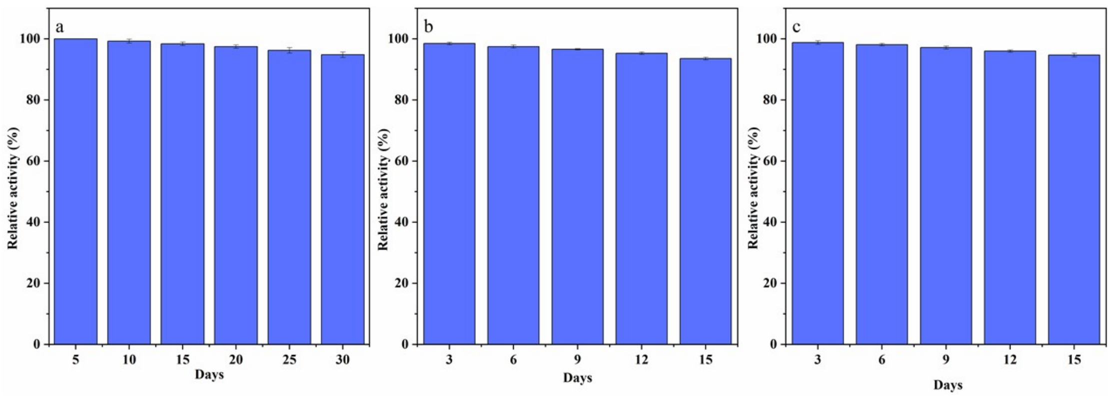

Figure S4 Stability of the catalytic activity of $CoFe_2O_4$@N-GQDs@CeO_2 oxidase: (a) under optimal conditions; (b) the Yellow River water; (c) Tap water.

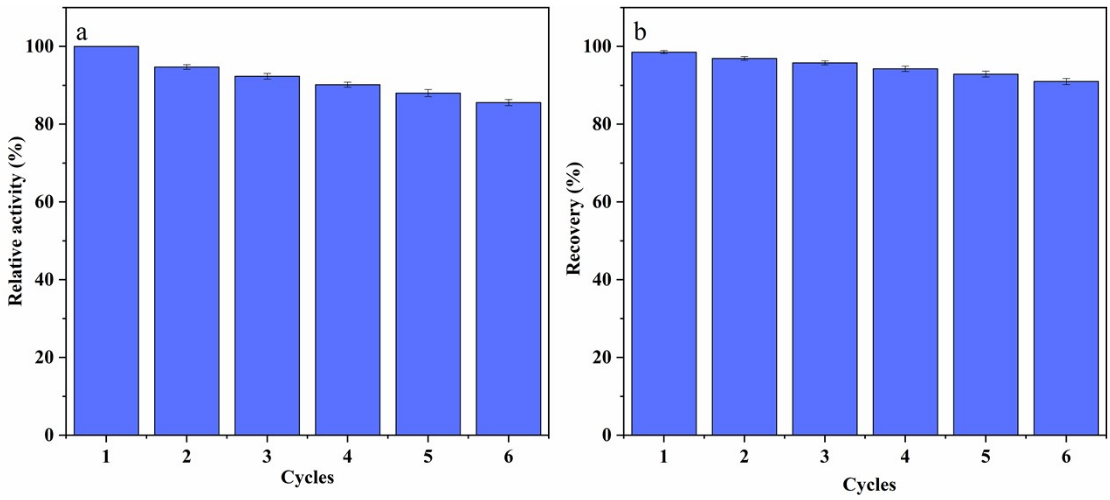

Figure S5 (a) Relativity activity (%) and (b) recovery (%) of the $CoFe_2O_4$@N-GQDs@CeO_2 within six cycles under the optimum conditions.

Table S1 Comparison of the sensing performance of other catalysts in the detection of hydroquinone.

Method	Catalysts	Linear range(μM)	LOD(μM)	References
Colorimetric	Fe/Mn-N-C	0-100	0.216	[1]
Colorimetric	Pt/Cds	100-1000	45.5	[2]
Colorimetric	$NiCo_2O_4$	5-110	2.7	[3]
Colorimetric	Co_3O_4-CeO_2	2-200	0.789	[4]
Colorimetric	$NiMnO_3$	1-85	0.68	[5]
Electrochemistry	Ce-MOF/CNTs	10-100	3.5	[6]
Electrochemistry	Pretreated PGE	10-70	0.59	[7]
Fluorometry	C-dots	0.1-50	0.1	[8]
Colorimetric	$CoFe_2O_4$@N-GQDs@CeO_2	0.25-60	0.166	This woke

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