Electronic Supplementary Information

A novel strategy for sensitive and rapid detection of ascorbic acid via the Tyndall effect of cobalt hydroxide nanoflakes

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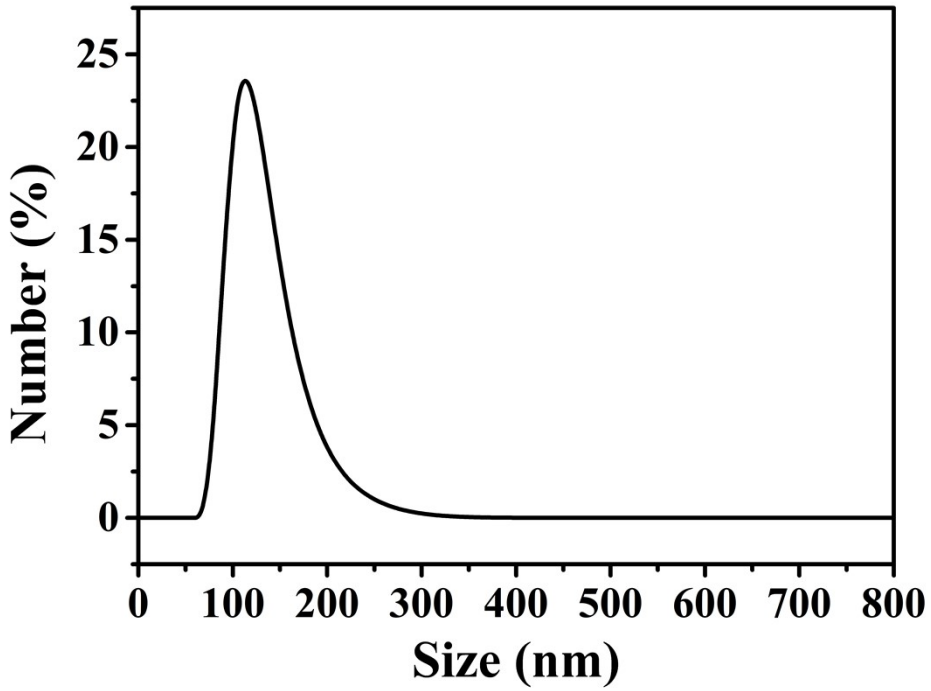

Fig. S1 Dynamic light scattering (DLS) result of the prepared CoOOH nanoflakes.

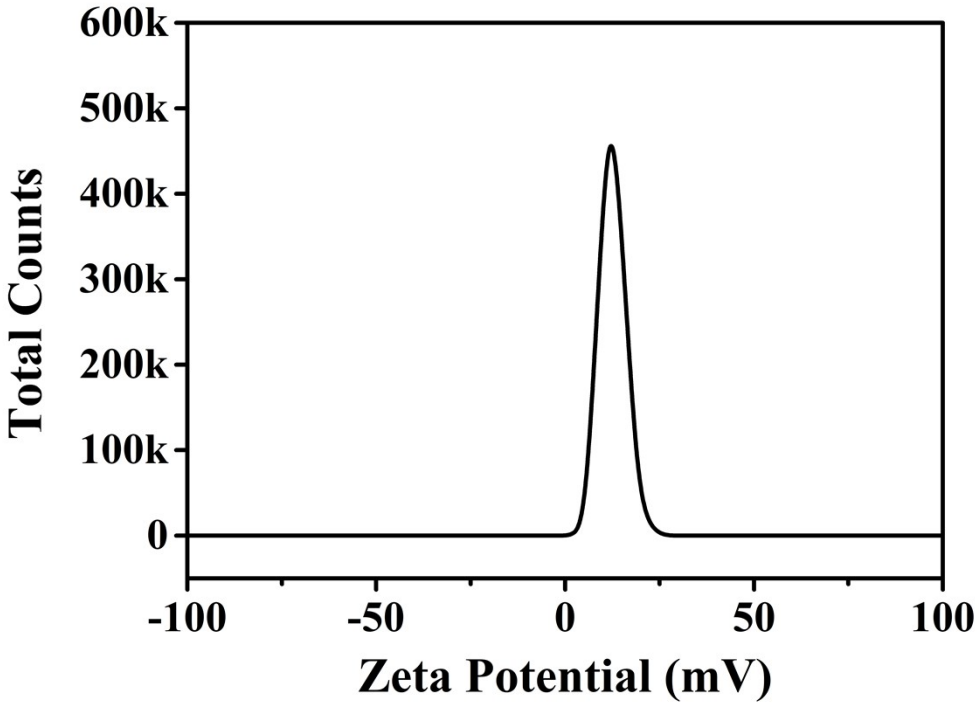

Fig. S2 Zeta-Potential of Values of the prepared CoOOH nanoflakes.

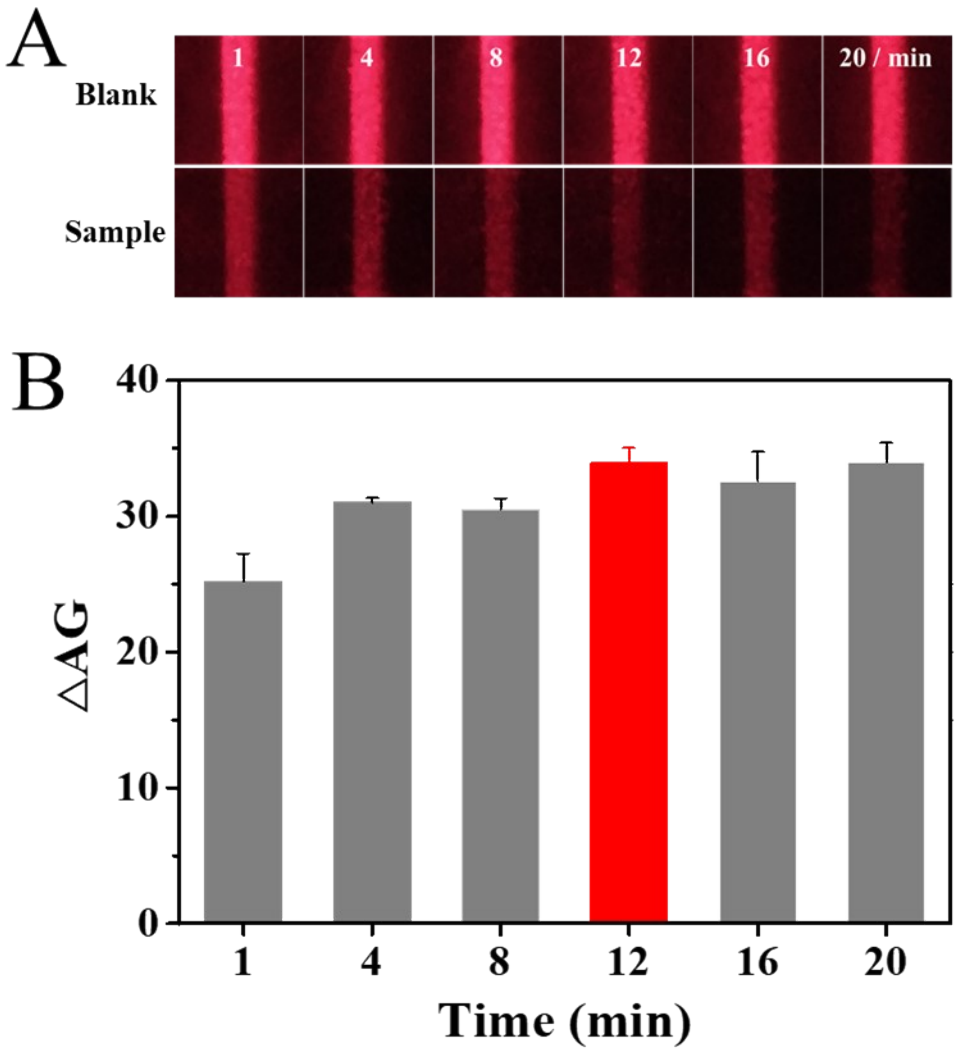

Fig. S3 (A) The TE images obtained from the 2.5 μg/mL CoOOH nanoflakes solution incubated without or with 10 μM AA for different time (1, 4, 8, 12, 16 and 20 minutes). (B) The average grayscale change (ΔAG) of the TE images shown in (A). Each error bar represents a standard deviation across three replicate experiments.

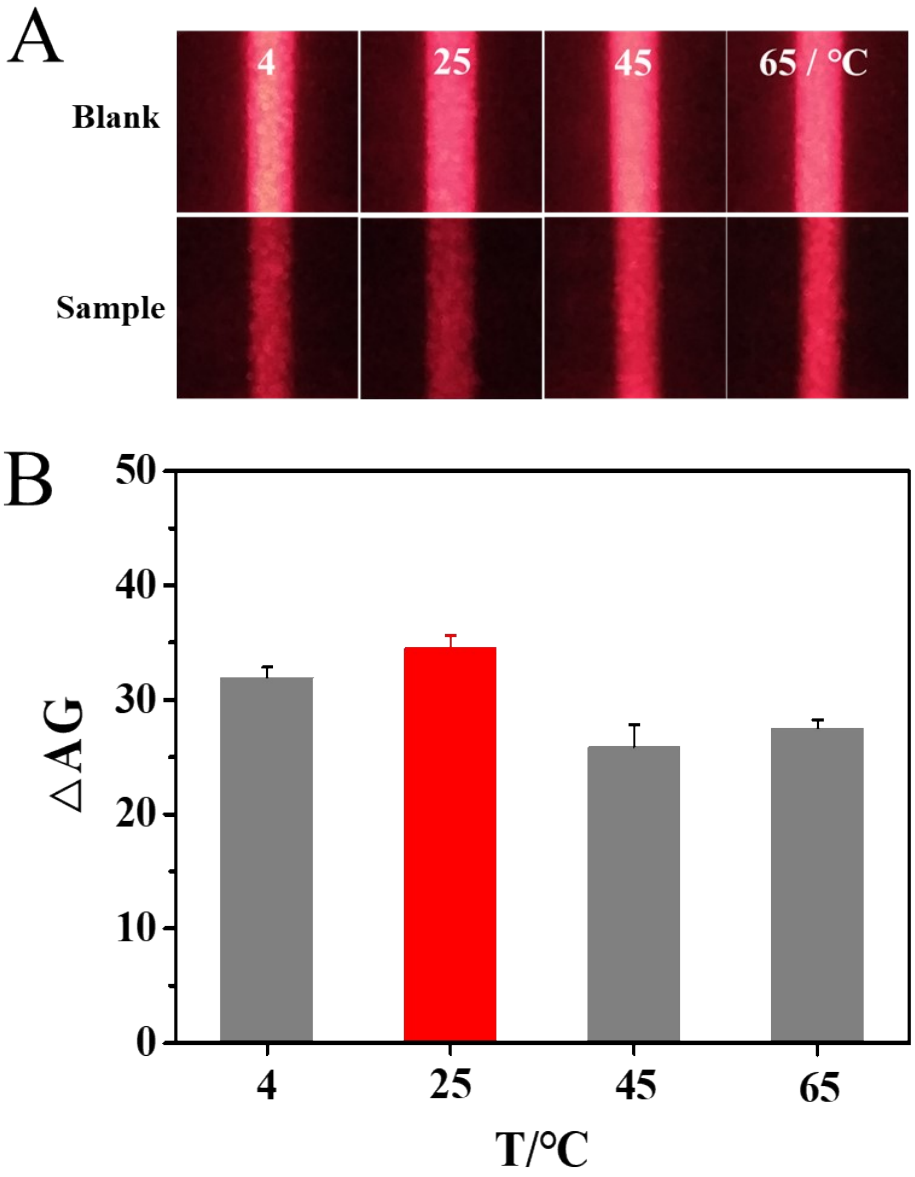

Fig. S4 (A) The TE images obtained from the 2.5 μg/mL CoOOH nanoflakes solution incubated without or with 10 μM AA at different temperature (4, 25, 45 and 60 °C). (B) The average grayscale change (ΔAG) of the TE images shown in (A). Each error bar represents a standard deviation across three replicate experiments.

Table S1 Comparison of the new AA assay with some previous nanoprobe-based colorimetric technology.

Materials	Detection method	Detection range (μM)	LOD (μM)	Reference
Co_3O_4/CGM	Colorimetry	30 - 140	0.19	S1
Cu-Ag/rGO	Colorimetry	5 - 10	3.6	S2
Fe-MOF	Colorimetry	30 - 485	6	S3
BSA-AuNCs	Colorimetry	2 - 50	0.16	S4
CoOOH-TMB	Colorimetry	0.5 - 50	0.14	S5
CoOOH-ABTS	Colorimetry	0.5 - 15	0.16	S6
CoOOH-OPD	Colorimetry	0.5 - 60	0.43	S7
CoOOH	TE	0.25 - 40	0.012	This work

TE, Tyndall Effect.

Table S2 Determination of AA in vitamin C tablets.

Sample	Spiked (μM)	Total found (μM)	Recovery (%) n=3	RSD (%) n=3
Vitamin C-tablet	0.00	0.70	/	0.32
	5.00	5.91	104.2	7.17
	10.00	10.13	94.3	3.10

Reference

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