Supporting

Fluorometric and Colorimetric dual-signal nanoplatform for ultrasensitive visual monitoring the activity of alkaline phosphatase

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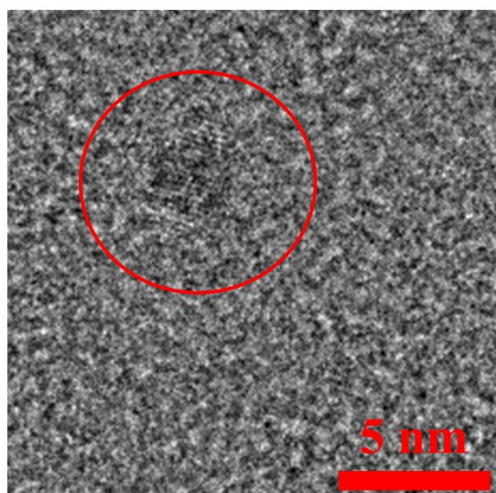Tel: +86 13522636676

E-mail address: Yufei.Liu@cqu.edu.cn

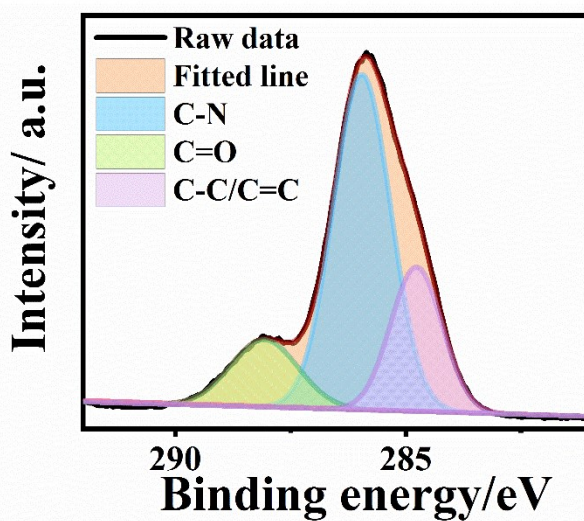Fig. S1 The high resolution TEM images of the CNPs.

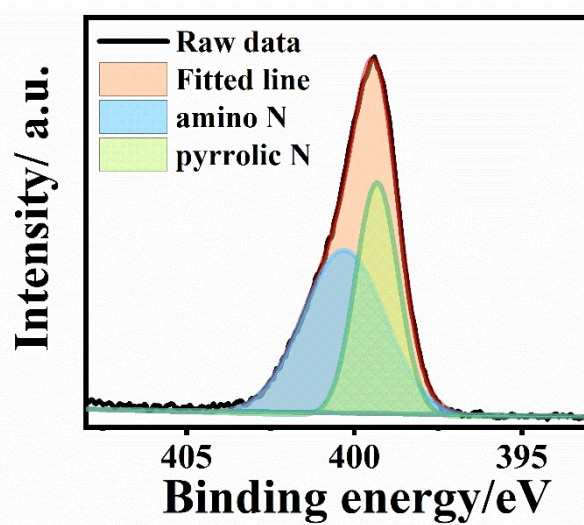Fig. S2 XPS C 1s spectrum and the deconvoluted results of CNPs.

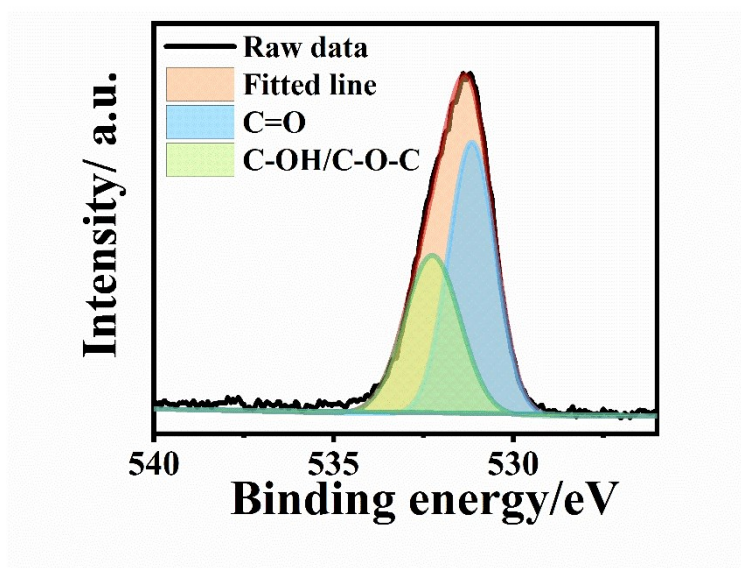Fig. S3 XPS N 1s spectrum and the deconvoluted results of CNPs.

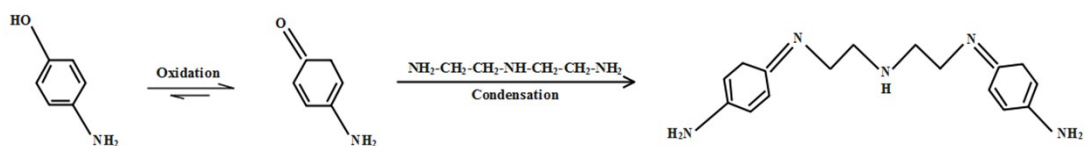Fig. S4 XPS O 1s spectrum and the deconvoluted results of CNPs.

Fig. S5 Possible structural evaluation and fluorescence response mechanism.
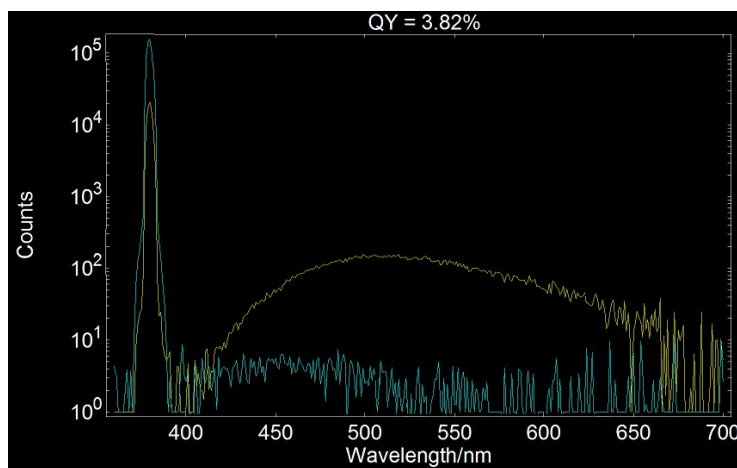

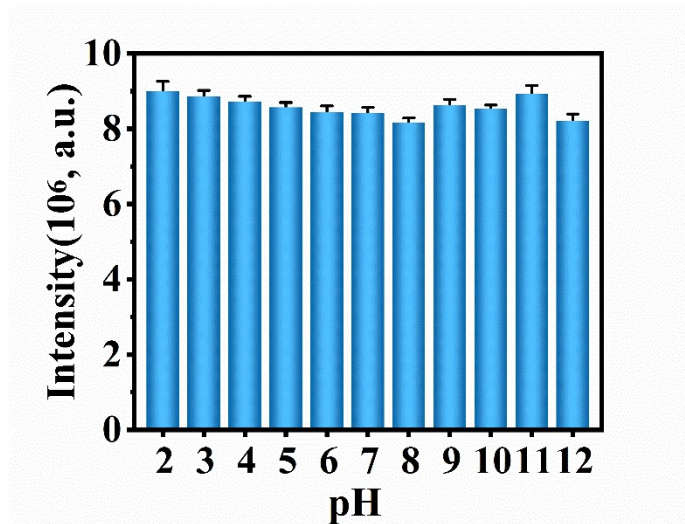Fig. S6 The original data of absolute quantum yield (QY) of CNPs.
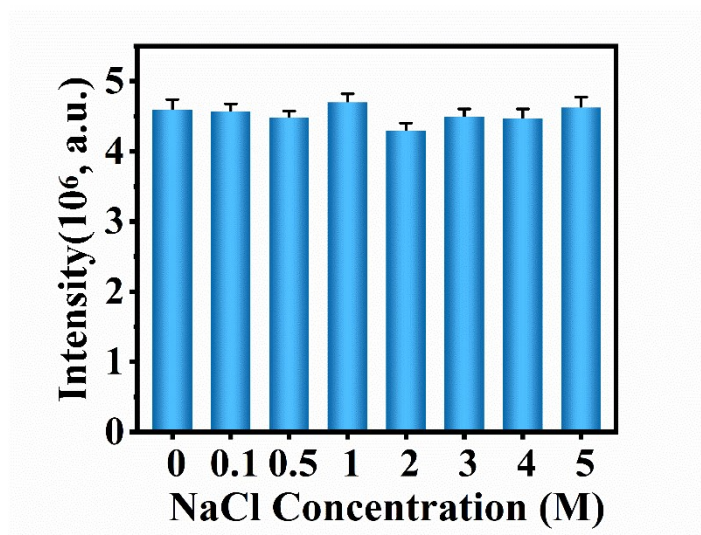
Fig. S7 The pH stability of CNPs.

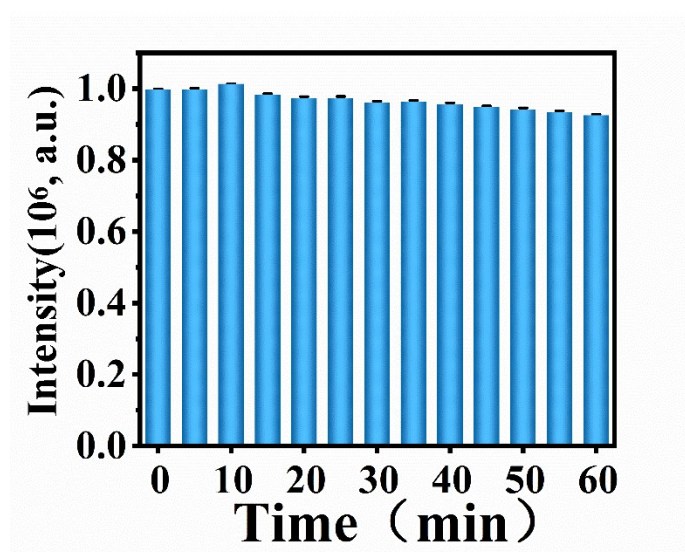Fig. S8 The ionic concentration stability of CNPs.

Fig. S9 The UV- illuminating stability of CNPs.

Fig.S10 a) The fluorescence spectrum and b) UV-vis absorbance spectrum of CNPs with different concentrations of AP; The linear relationship between c) fluorescence intensity and d) UV-vis absorbance intensity toward different concentrations of AP.

Fig. S11 The fluorescence change towards different a) APP concentration, b) DEA buffer solution pH, c) DEA concentration, d) ALP catalytic reaction time, e) DETA concentration and f) DETA incubation time.
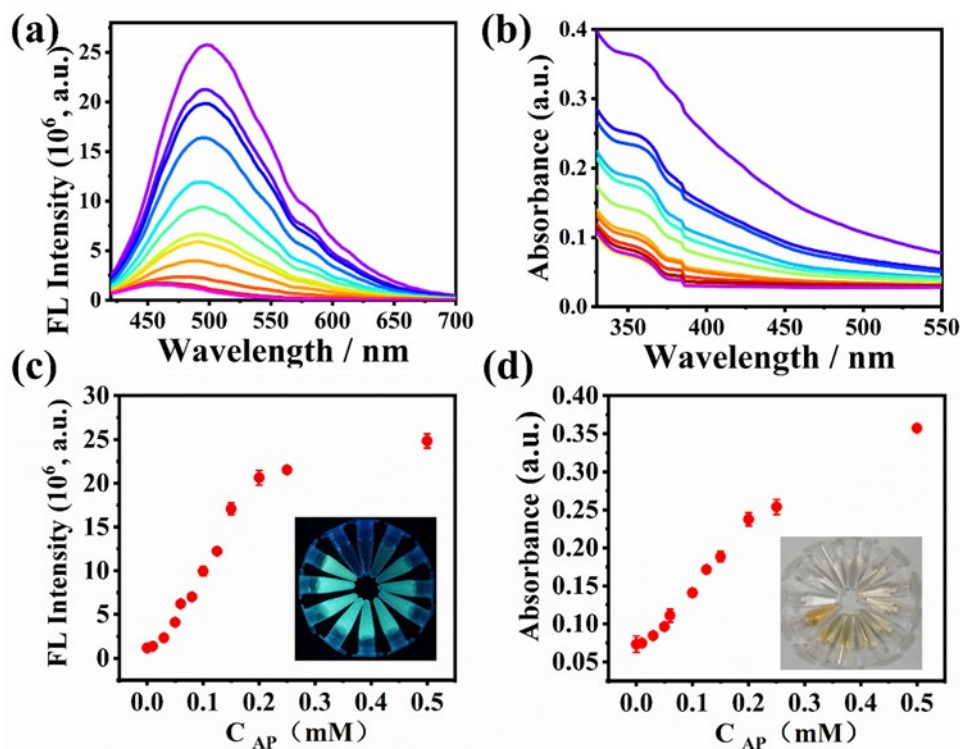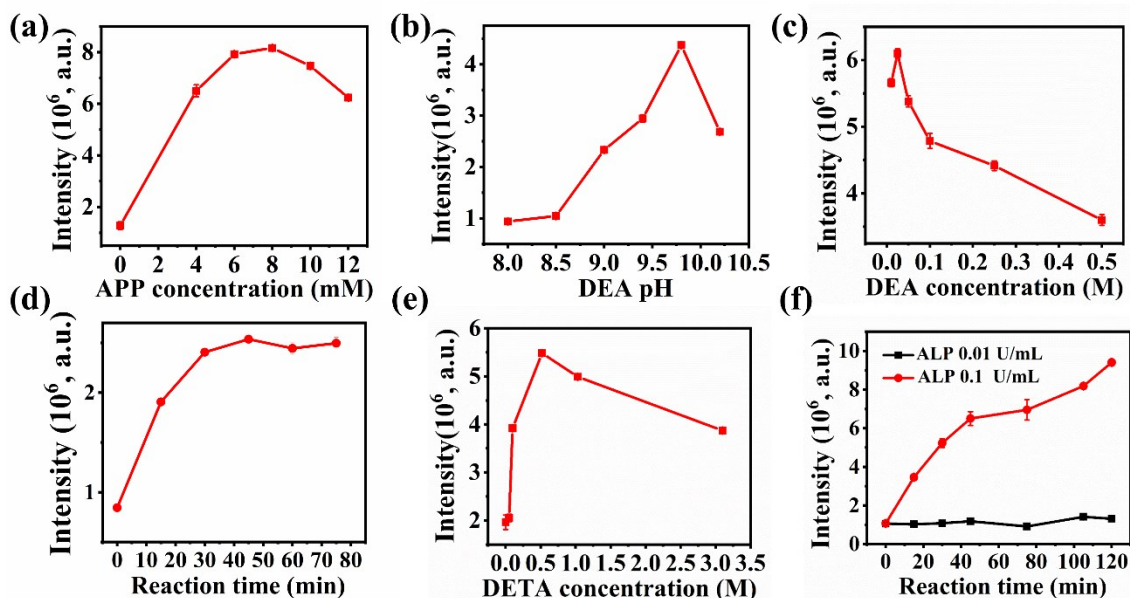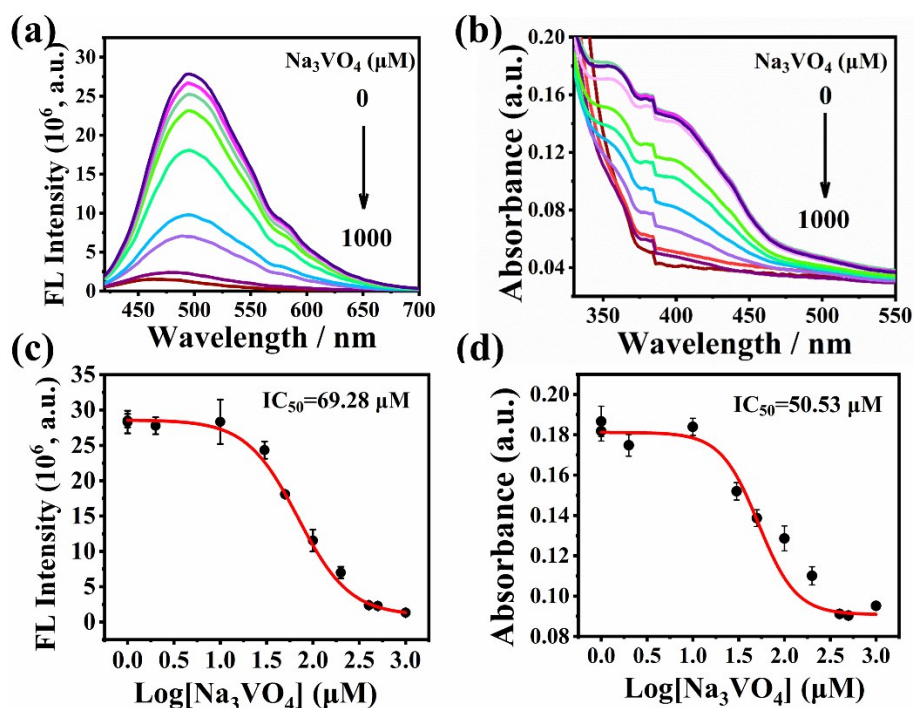
Fig.S12 a) The fluorescence spectrum and b) UV-vis absorbance spectrum of CNPs with different concentrations of Na_3VO_4; c) fluorescence intensity and d) UV-vis absorbance intensity toward different logarithm of Na_3VO_4 concentrations.

Table.S1 Comparison of previously reported methods for detection of ALP activity.

Method	Materials	Linear range	Detection limit	References
Fluorescence	EuAMP infinite coordination polymer (ICP) nanoparticles	1-150 mU	0.35 mU	[1]
Fluorescence	silicon-containing polymer dots	0.7-50 mU	0.1 mU	[2]
Fluorescence	Silicon Nanoparticles	0.2-30 mU	0.2 mU	[3]
Fluorescence	Cu nanoclusters	1-50 mU	0.27 mU	[4]
photoacoustic	AgNPs	5-70 mU	1.1 mU	[5]
Fluorescence	CNPs	0-24 mU	0.05 mU	This work
Colorimetric	CNPs	0-30 mU	0.05 mU	This work

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