

Supplementary material

Inner filter effect-based near-infrared fluorescent probe for detection of metronidazole on a smartphone-integrated analytical platform

Shaojie Wang, Yongbo Wang*, Yuanna Ning and Qiming Liu

*School of Biological and Pharmaceutical Science, Shaanxi University of Science and
Technology, Xi'an 710021, P. R. China*

*Corresponding authors:

Yongbo Wang

E-mail: ybwang@sust.edu.cn (Y. Wang)

Table S1 Spiked recovery plots of MNZ by our method and HPLC method

Sample	Spiked (μM)	Found (μM)	Recovery (%)	RSD (% , n = 3)	Spiked (μM)	Found (μM)	Recovery (%)	RSD (% , n = 3)
No. 1	0	- ^a	-	-	0	-	-	-
Honey	20	19.0	95.0	2.3	20	24.5	122.5	1.0
No.1	0	-	-	-	0	-	-	-
Milk	20	17.5	87.5	9.7	20	19.8	99.0	1.2

^a - : MNZ was not detected in the real samples without spiking MNZ.

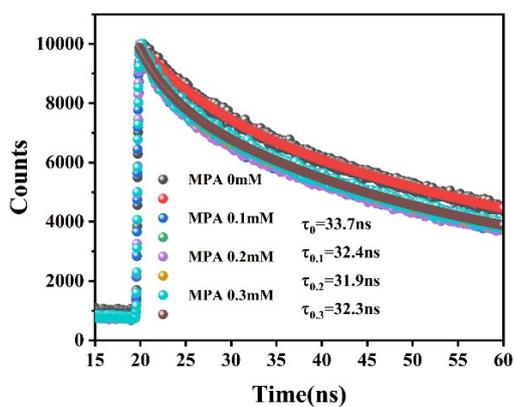


Fig. S1 The fluorescence decay curves of QD710 with varying MPA concentrations.

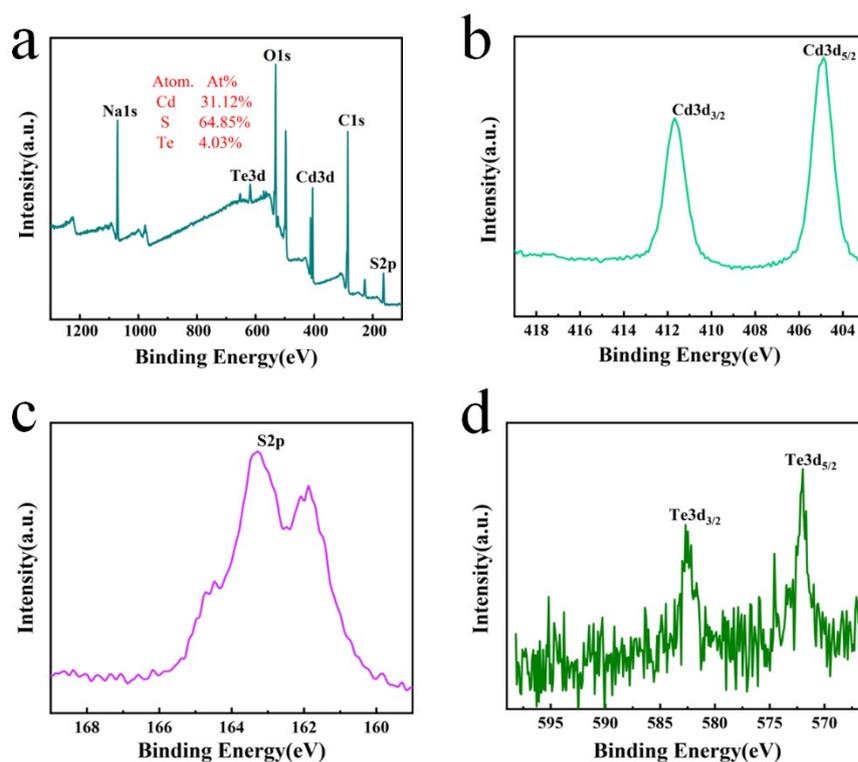


Fig. S2 (a) FTIR spectrum of QD710; (b) XPS full scan spectrum of QD710 (c) Cd3d; (d) S2p; (e) Te3d; (f) XRD pattern of QD710

Fig. S2 show the XPS profiles and HR XPS spectra of the synthesised QD710 samples. Fig. S2(a) presents the XPS full spectrum of QD710, indicating the presence of Cd, S and Te, with the corresponding atomic ratios calculated to be 31.12% (Cd), 64.85% (S) and 4.03% (Te) respectively. Fig. S2(b) shows the Cd3d spectrum of QD710, showing peaks at binding energies of 411.7 eV and 404.9 eV, which are the peak positions for Cd3d_{3/2} and Cd3d_{5/2}, consistent with those reported in the literature, indicating the presence of Cd²⁺ in the sample; Fig. S2(c) shows the S2p spectrum of QD710, with two distinct characteristic peaks for S2p, located at binding energies of 163.1 eV and 162.1 eV, which correspond to the characteristic peaks of S2p_{1/2} and S2p_{3/2}, respectively, indicating the presence of element S in the sample as S²⁻; as shown in Fig. S2(d), the spectrum of Te has two sub-peaks located at binding energy values of 582.5 eV and 572.2 eV, which are attributed to the characteristic peaks of Te3d_{3/2} and Te3d_{5/2}, respectively, indicating the presence of Te elements.

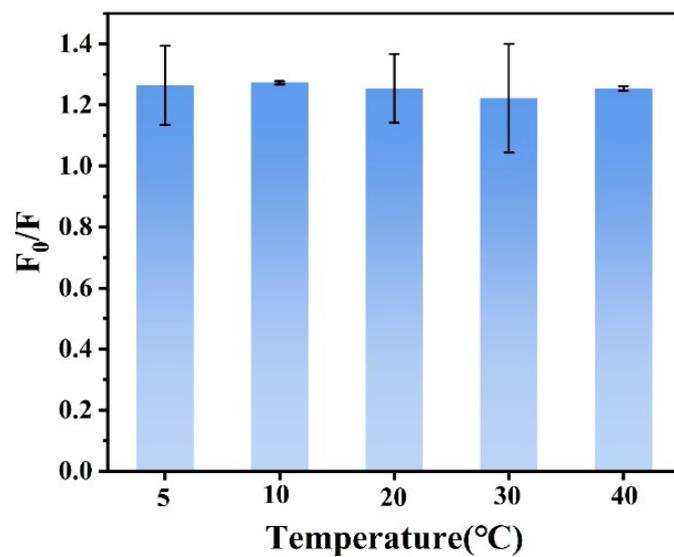
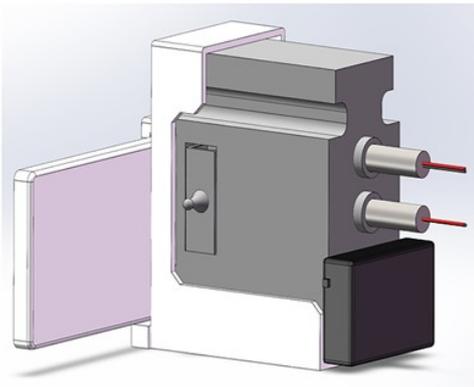


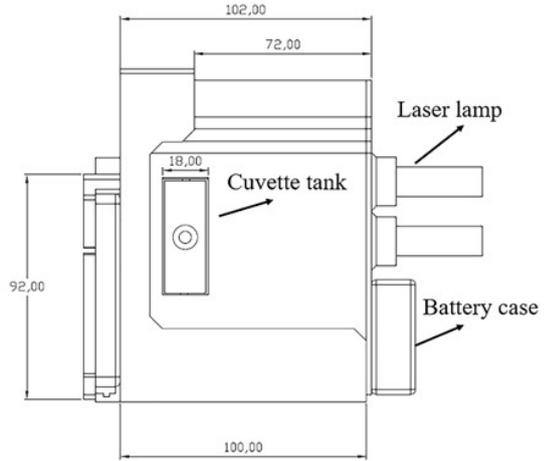
Fig. S3 The fluorescence intensities of QD710 in the



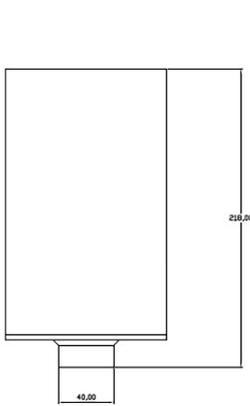
Fig. S4 The real photographs of the main parts of smartphone-integrated analytical platform.



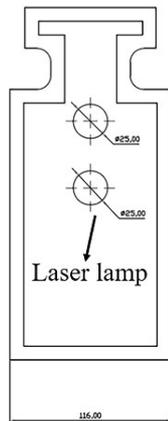
Overall outline view



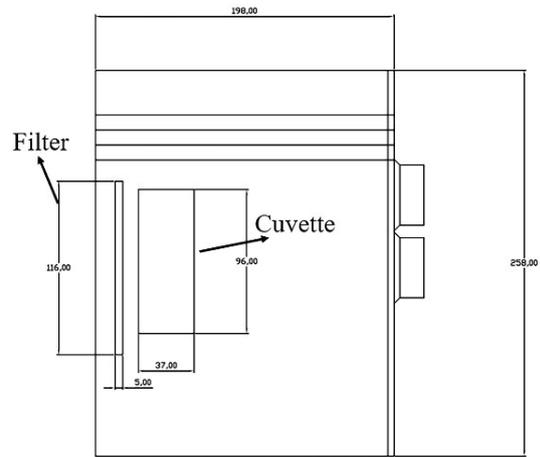
Side



Vertical view

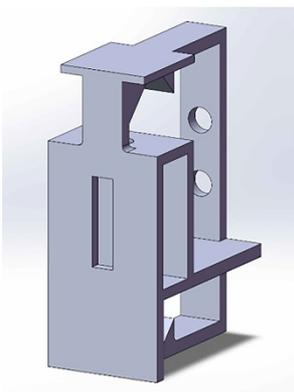


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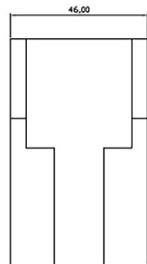


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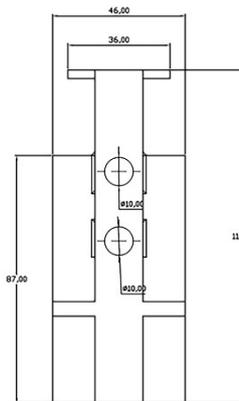
Optical Line System



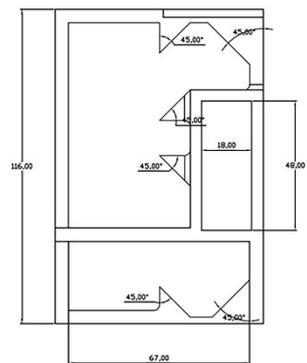
Overall outline view



Vertical view



Back



Side

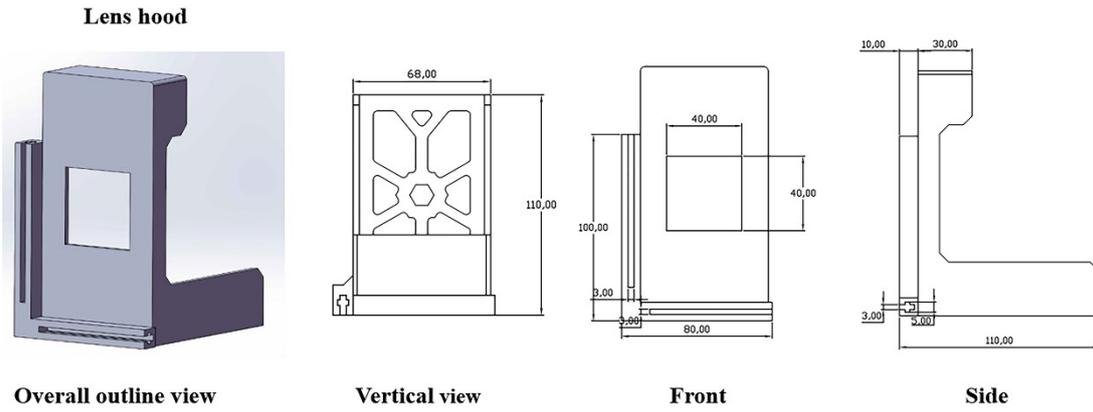


Fig. S5 The detailed size of the analysis platform.