Supporting information

Ion imprinting technology-assisted rotational microfluidic hybrid chip for fluorescence detection of hexavalent chromium ions

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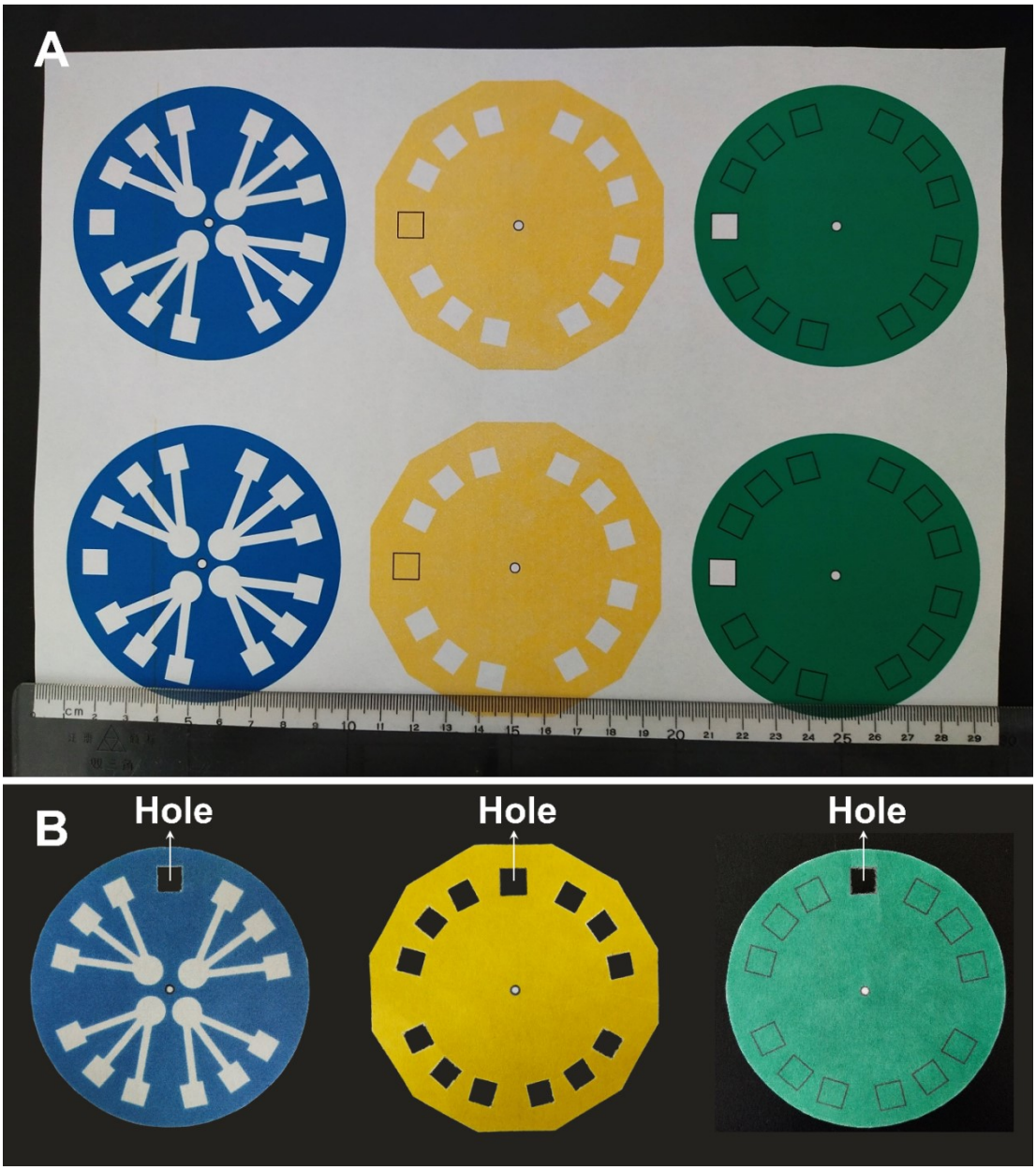

Fig. S1. Photographs of (A) the rotational microfluidic hybrid chip printed on Whatman chromatography No. 1 filter paper of A4 size, (B) three layers without/with designed holes in them.

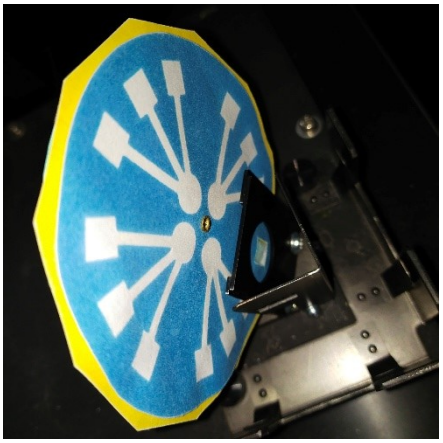

Fig. S2. Photograph of the rotational microfluidic hybrid chip placed on the shelf of F-4700 spectrophotometer.

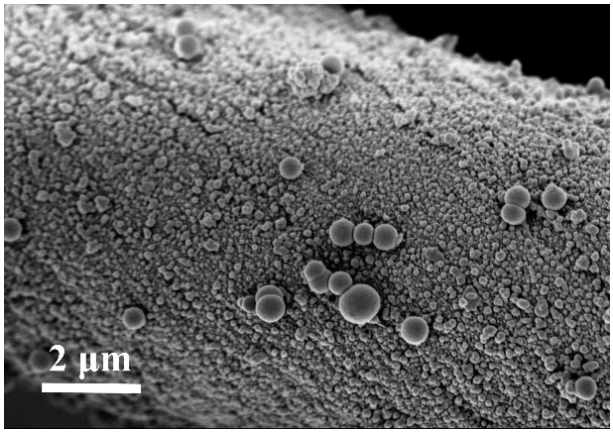

Fig. S3. SEM images of the NIP cloth-based fluorescence sensing component.

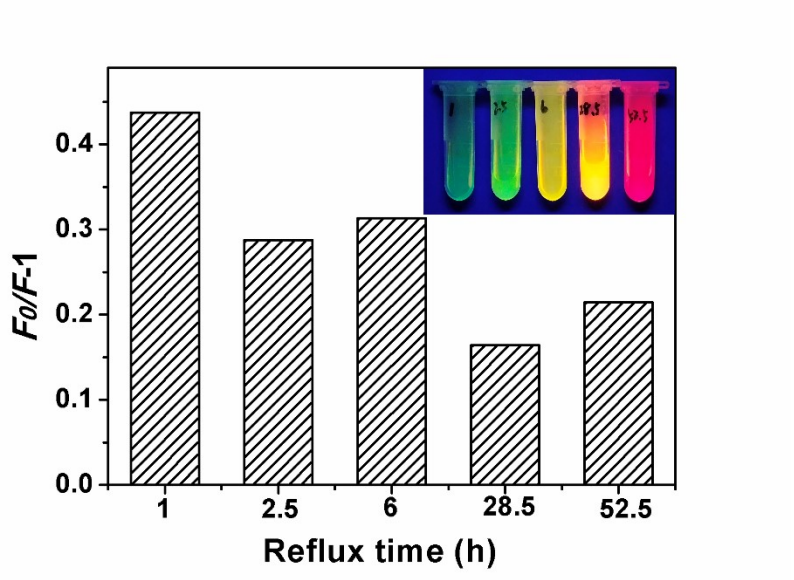

Fig. S4. Fluorescence quenching of TGA-capped CdTe QDs with different reflux time.

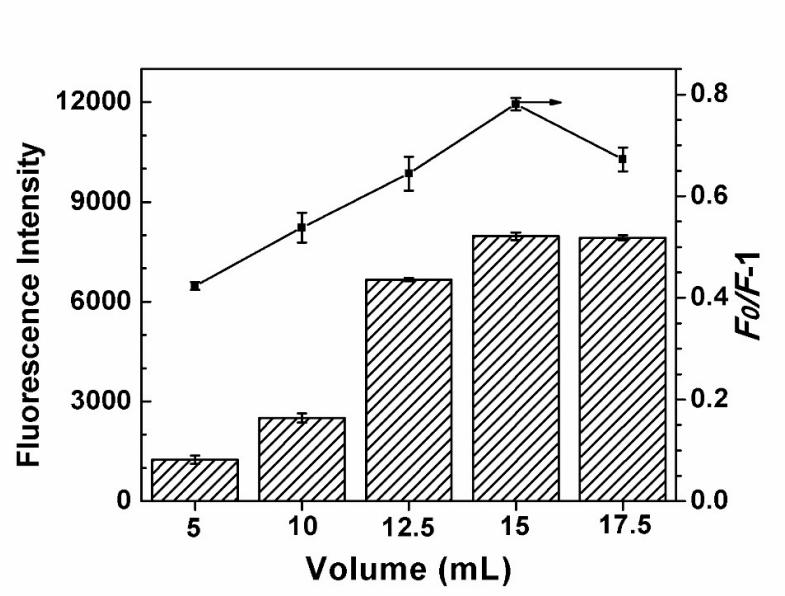

Fig. S5. Effects of the amount of CdTe quantum dots on fluorescence intensity and quenching of cloth-based sensing components.

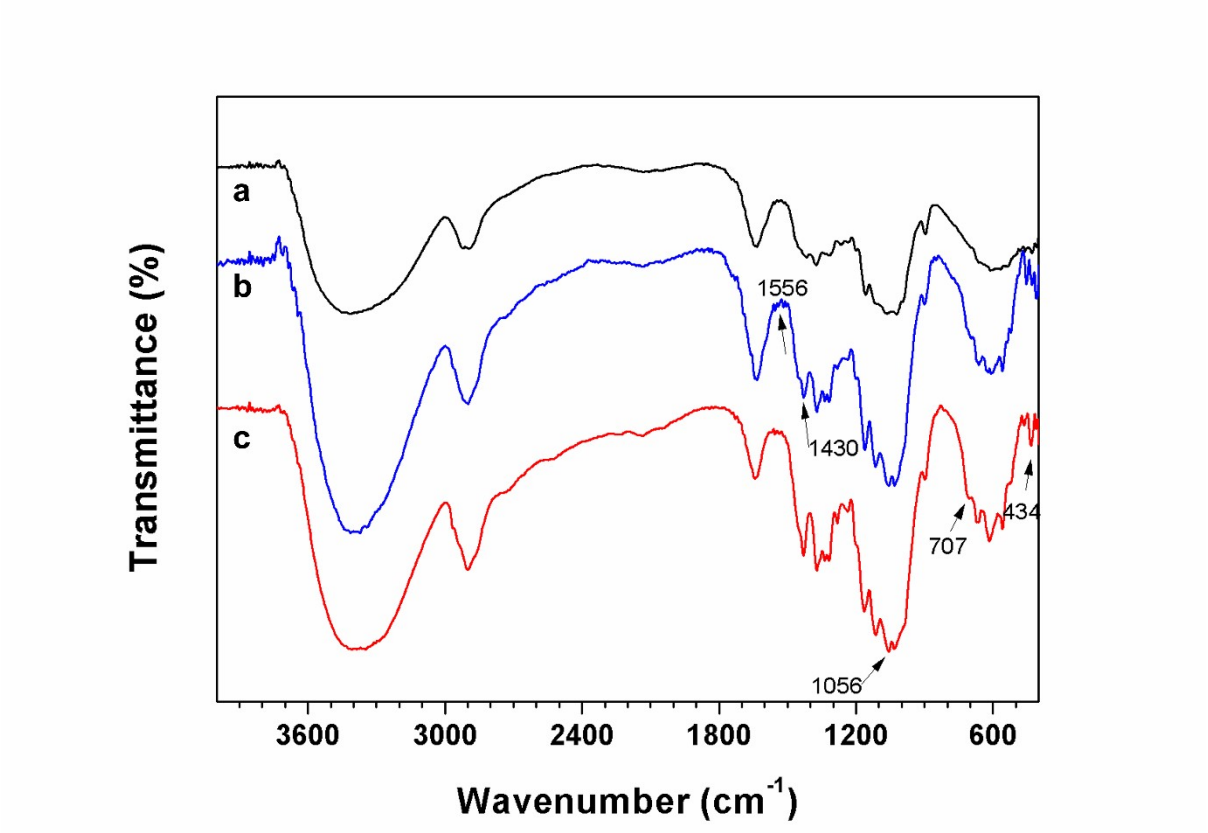

Fig. S6. FT-IR spectra of (a) bare cloth, (b) cloth grafted with CdTe quantum dots and (c) IIP cloth-based fluorescence sensing component.

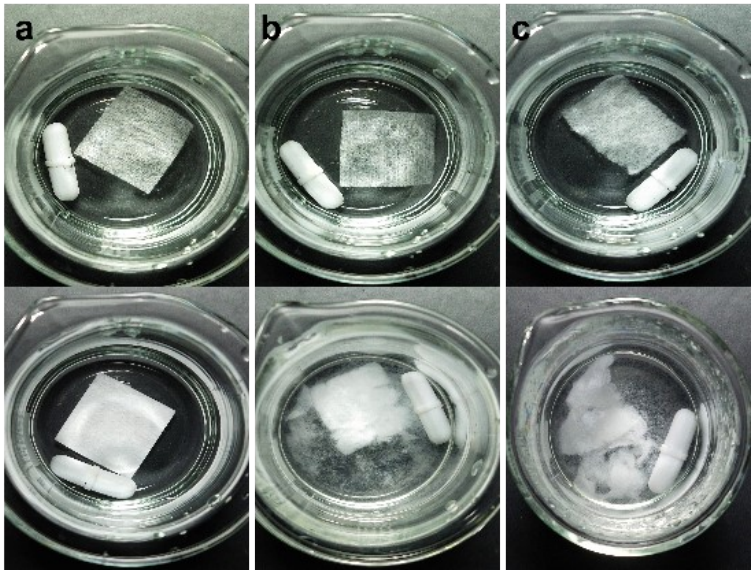

Fig. S7 Photographs of cloth (up) and paper (down) after vigorous magnetic stirred of (a) 0 min, (b) 10 min and (c) 20 min.

Table.S1. The performance of Cr-IIP fluorescence sensing cloth-based components under different concentration of template ions and addition amount of functional monomer and crosslinker.

Type / Group	Template (mg/L)	Momomer APTES(μL)	Crosslinker TEOS(μL)	Initial FL F_0	Quench FL F	F_0/F-1
1	100	60	50	2560	2101	0.2185
2	100	40	90	3239	2694	0.2023
3	100	40	50	1804	1455	0.2399
4	80	60	50	3462	2834	0.2216
5	80	40	50	2698	2110	0.2787
6	70	60	50	2433	1729	0.4072
7	70	40	50	2825	2335	0.2099
8	60	60	50	2663	2045	0.3022
9	60	40	50	1991	1673	0.1901