Supporting Information

Post imprinting modification based on multilevel mesoporous silica for high sensitive molecularly imprinted fluorescence sensors

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1. Characterization of p-MIFPs.



Figure S1 TEM images of multilevel mesoporous silica before (A) and after (B) anchoring of QDs; Mapping of p-MIFPs (C, D and E) confirm the existence of CdTe QDs.

2. Binding experiment

The binding capacity of as prepared p-MIFPs was evaluated by adsorption experiment. Typically, 10 mg p-MIFPs, BPA was added into 5.0 mL solution with final concentration of 20 to 80 mg/L, and placed on the oscillator at room temperature for 1 h. Then the supernatant were separated by centrifugation and detected by HPLC. For the kinetic absorption experiment, BPA was added into 5.0 mL 100 mg/L p-MIFPs solution with final concentration of 80 mg/L, and placed on the oscillator at room temperature. The binding kinetics were tested by monitoring the temporal amount of BPA in the solutions.



Figure S2 Static and dynamic adsorption experiment of MIPs before and after anchor of QDs .



3. Comparison of d-MIFPs and p-MIFPs.

Figure S3. The photo of fluorescence polymers prepared by doping (A and B before elution, C and D after elution) and post imprinting method (E and F) under UV light (A, C, E) and sunlight (B, D, F); and corresponding fluorescence spectrum of p-MIFPs (G) (silt widths of excitation and emission, 2.5 and 2.5 nm, 10 mg/L) and d-MIFPs (silt widths of excitation and emission, 5.0 and 5.0 nm, 50 mg/L)

	p-MIFPs	d-MIFPs
Preparation process	Polymerization-elution-post	Polymerization-elution
	modification	
Template Elution	Acid ethanol	Ethanol/ACN
QDs distribution	Uniform	Non-uniform
Fluorescence intensity	High	Low
Fluorescence color	Red	Yellow
Emission wavelength	600 nm	550 nm
QDs	Activated	Passivated

Table S1 Comparison of d-MIFPs and p-MIFPs.

4. The stability and reusability of p-MIFPs.





Figure S4 The storage stability (A), photo stability (B) and reusability (C) of p-MIFPs.

5. Characterization of p-r-MIFPs



Figure S5 The morphology (A, B) and fluorescence spectrum (C) of p-r-MIFPs.



6. The ratio of relative amounts of CDs and QDs on the sensitivity of



Figure S6 The p-r-MIFPs with different ratio of CDs and QDs to different concentrations of BPA. The initial fluorescence intensity ratio of CDs and QDs is 1:4 (A) and 1:1 (B), respectively. The fluorescence spectrum of CDs and QDs (C).



7. The stability and reusability of p-r-MIFPs.



Figure S7 The storage stability (A), photo stability (B) and reusability (C) of p-r-MIFPs.