Electronic supporting information

Development of octadecyl-functionalized-nanotubular TiO_2/Ti wire solid-phase microextraction fiber

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2. Experimental

2.2. Instrumentation

Table S1 The excitation and emission wavelength program used for determination of PAHs.

PAHs	Time (min)	λ_{ex} (nm)	λ_{em} (nm)
Flu	0	260	340
FlA	15	289	462
Pyr	17.5	320	380
BaA, BbF, BkF	21	294	430

3. Results and discussion

3.1. Characterization of the SPME fiber

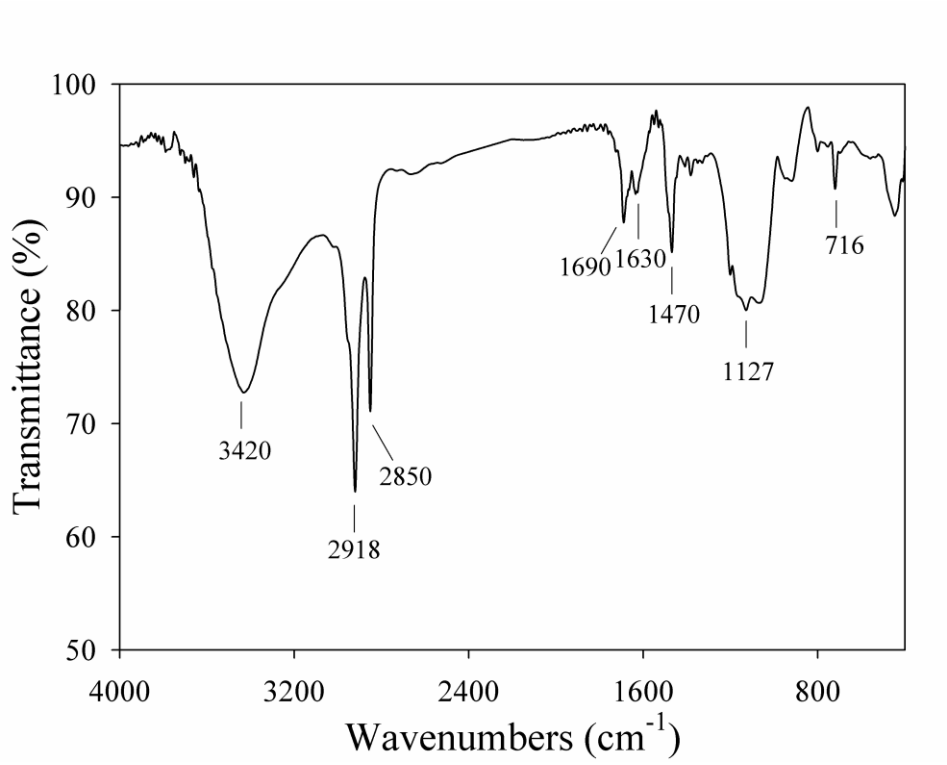

Fig.S1. FTIR absorption spectrum of the sol-gel coating.

3.2. Performance of the SPME fiber

3.2.2. Thermal stability

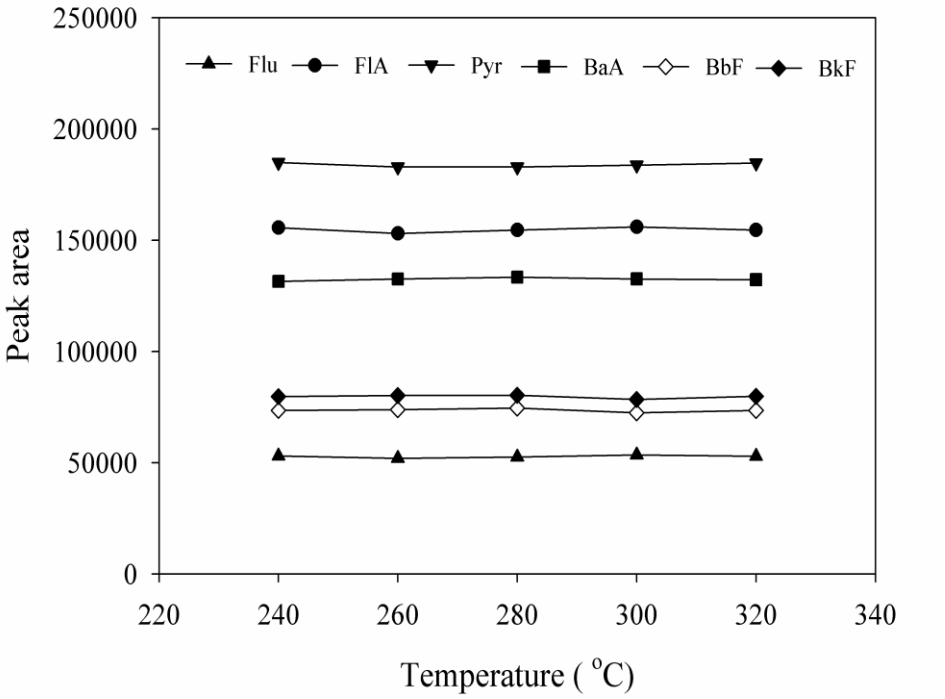

Fig.S2. The thermal stability of the SPME fiber. The extraction capability toward PAHs after the SPME fiber was heated at different temperatures. Experiment conditions: extraction time, 60 min; desorption solvent, acetonitrile; desorption time, 20 min. Concentrations of Flu, FlA, Pyr, BaA, BbF and BkF are 1.8, 10.0, 5.0, 1.8, 1.8, 0.5 ng mL^{-1}, respectively.

3.4. Optimization of SPME

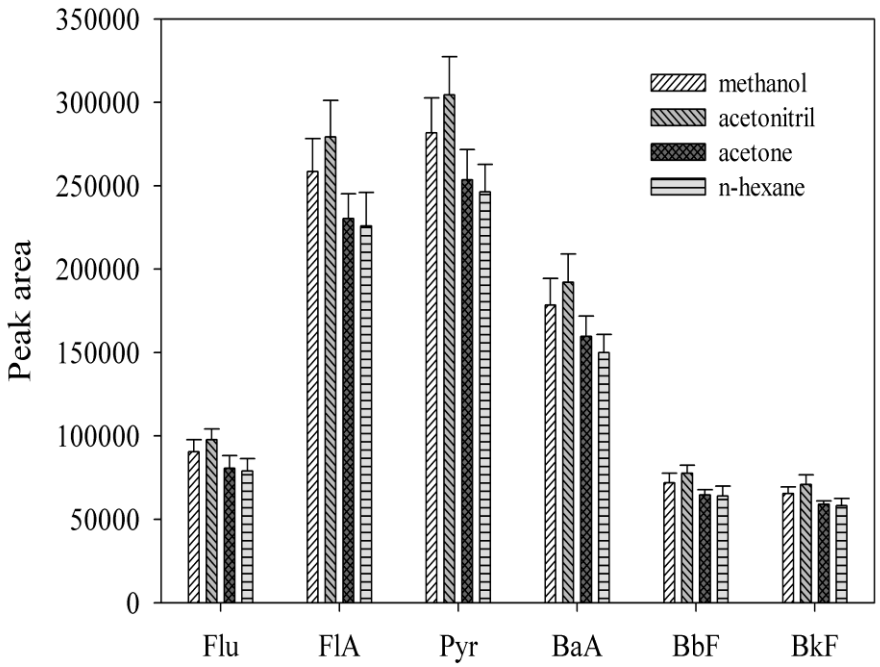

Fig.S3. The effects of desorption solvents on the extraction efficiency of the proposed fiber. Experiment conditions: extraction time, 60 min; salt addition, 10% (w/v); desorption time, 20 min. Desorption solvent volume (500 μL) was concentrated to 100 μL by N_2. Spiked concentration: Flu, 0.38 ng mL^{-1}; FlA, 2.0 ng mL^{-1}; Pyr, 1.0 ng mL^{-1}; BaA, 0.38 ng mL^{-1}; BbF, 0.38 ng mL^{-1}; BkF, 0.10 ng mL^{-1}.

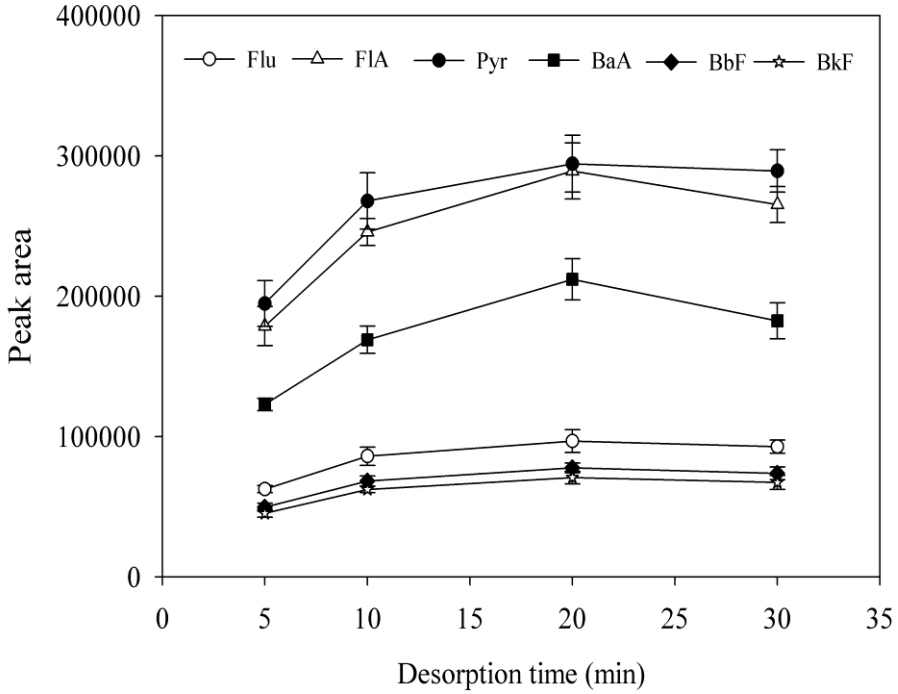

Fig.S4. The effects of desorption time on the extraction efficiency of the proposed fiber. Experiment conditions: extraction time, 60 min; salt addition, 10% (w/v); desorption solvent, acetonitril. Desorption solvent volume (500 μL) was concentrated to 100 μL by N_2. Spiked concentration: Flu, 0.38 ng mL^{-1}; FlA, 2.0 ng mL^{-1}; Pyr, 1.0 ng mL^{-1}; BaA, 0.38 ng mL^{-1}; BbF, 0.38 ng mL^{-1}; BkF, 0.10 ng mL^{-1}.

3.5. Analytical performance and application

Table S2 Analytical results for the determination of PAHs in real water samples (n = 3).

Compounds	Detected concentrations (no spiking) ($\mu g\ L^{-1}$)	RSD (%)	Spiked concentrations ($\mu g\ L^{-1}$)	Recovery (%)	RSD (%)
Flu	0.053	4.8	0.38	92.6	6.1
FlA	n.d.[a]	-	2.0	101.8	7.3
Pyr	n.d.	-	1.0	90.7	3.6
BaA	n.d.	-	0.38	97.2	9.4
BbF	n.d.	-	0.38	88.4	5.8
BkF	n.d.	-	0.1	85.3	6.3

[a] n.d.: not detected.