Electronic Supplementary Material (ESI) for RSC Advances.

Support Information

Fabrication of a porous β-cyclodextrin-polymer-coated solid-phase microextraction fiber for the simultaneous determination of five contaminants in water using gas chromatography–mass spectrometry

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FIGURE CAPTIONS

1. Supplementary **Figure S1.** FT-IR spectra of (a) P-CDP, (b) tetrafluoroterephthalonitrile, and (c) β-CD.
2. Supplementary **Figure S2.** 150 mg of P-CDP was degassed at 100 °C for 24 h and then backfilled with N_2. (a) N_2 adsorption and desorption isotherms of P-CDP. S_{BET} is the Brunauer–Emmett–Teller surface area ($m^2\ g^{-1}$) of P-CDP computed from the N_2 adsorption isotherm. P and P_0 are the equilibrium and saturation pressures of N_2 at 77K, respectively. (b) The cumulative pore volume of P-CDP.
3. Supplementary **Figure S3.** Scanning electron micrographs of (a-b) P-CDP, image at magnification of 1200 and 5000. (c) SPME fiber coated with P-CDP, image at magnification of 5000.Supplementary.
4. Supplementary **Figure S4.** Thermogravimetric curve of P-CDP coating in nitrogen gas atmosphere. Heating rate: 10 °C min^{-1}.
5. Supplementary **Figure S5.** Effect of the experimental conditions on the extraction efficiency of P-CDP-coated fiber for analytes, (a) extraction temperature, (b) extraction time, (c) ionic strength, and (d) desorption time.
6. Supplementary **Figure S6.** Chromatograms of extract VOCs and odours from real samples. (spiked 70 μg L^{-1} benzene (1), 110 μg L^{-1} Phenol (2), 0.25 μg L^{-1} 1,3-Dichlorobenzene (3), 4 μg L^{-1} indole (4), 0.15 μg L^{-1} GSM (5))
7. Supplementary **Table S1.** EFs for the different compounds on P-CDP-coated fiber.

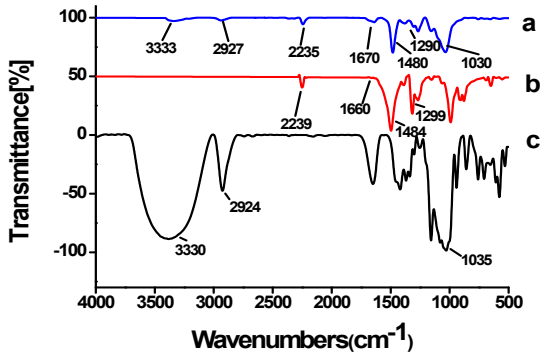


Figure S1. FT-IR spectra of (a) P-CDP, (b) tetrafluoroterephthalonitrile, and (c) β-CD.

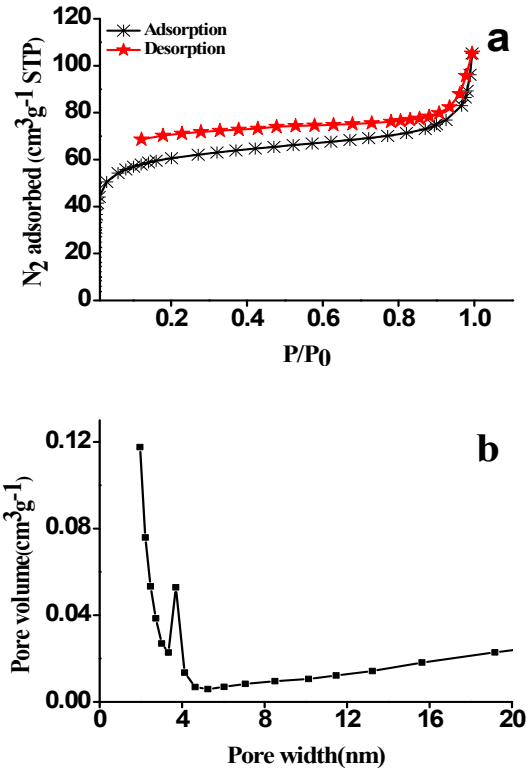


Figure S2. 150 mg of P-CDP was degassed at 100 °C for 24 h and then backfilled with N_2. (a) N_2 adsorption and desorption isotherms of P-CDP. S_{BET} is the Brunauer–Emmett–Teller surface area ($m^2\ g^{-1}$) of P-CDP computed from the N_2 adsorption isotherm. P and P_0 are the equilibrium and saturation pressures of N_2 at 77K, respectively. (b) The cumulative pore volume of P-CDP.

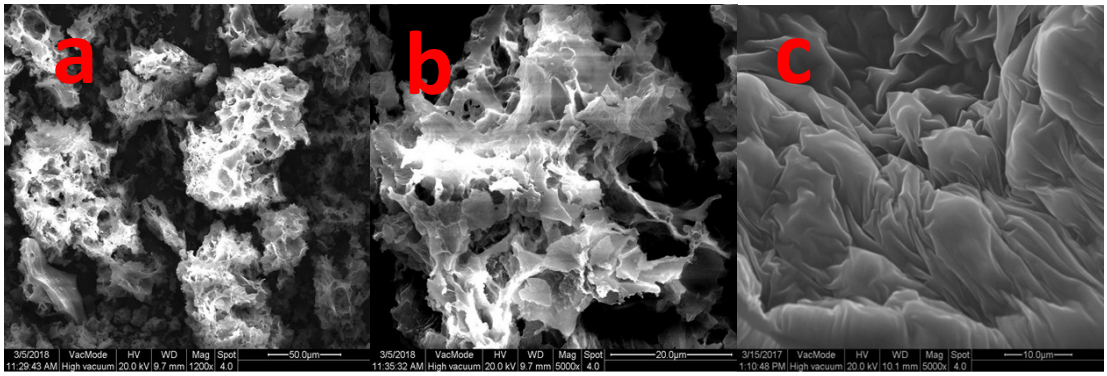


Figure S3. Scanning electron micrographs of (a-b) P-CDP, image at magnification of 1200 and 5000. (c) SPME fiber coated with P-CDP, image at magnification of 5000.

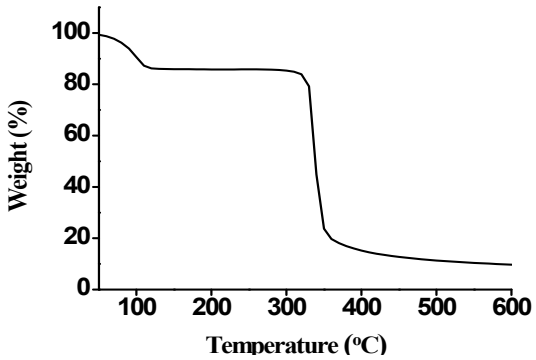


Figure S4. Thermogravimetric curve of P-CDPs coating in nitrogen gas atmosphere.

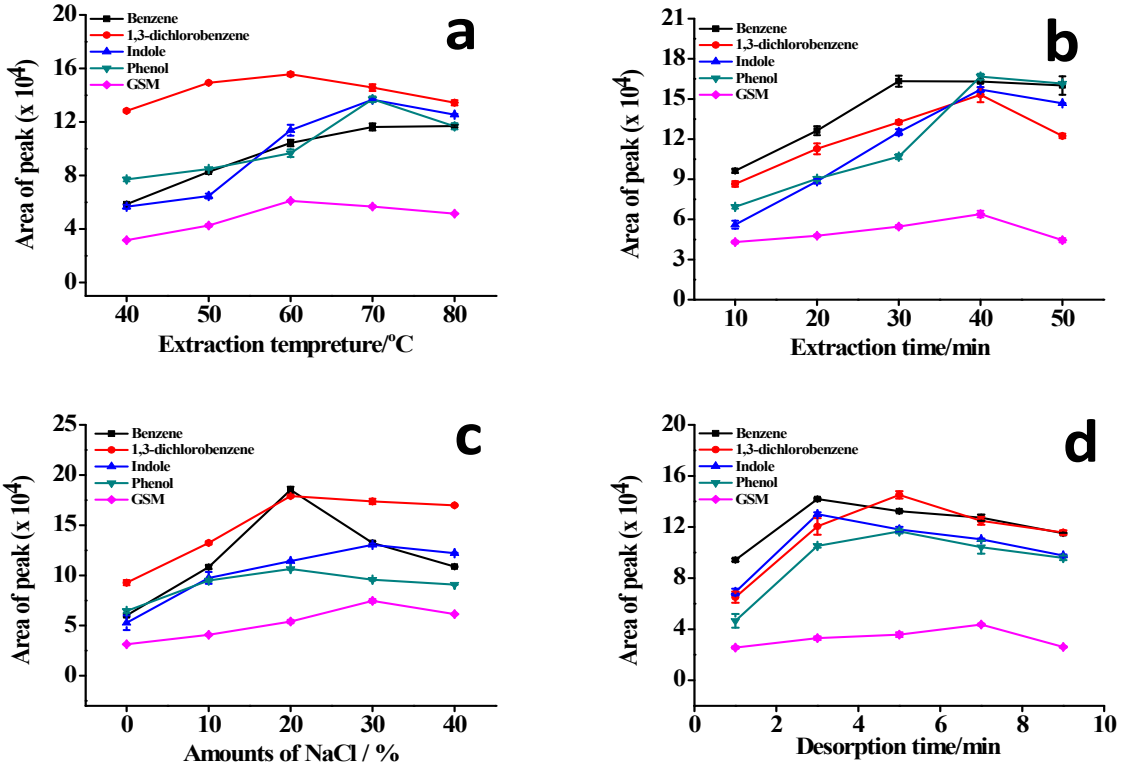


Figure S5. Effect of the experimental conditions on the extraction efficiency of P-CDP-coated fiber for analytes, (a) extraction temperature, (b) extraction time, (c) ionic strength, and (d) desorption time.

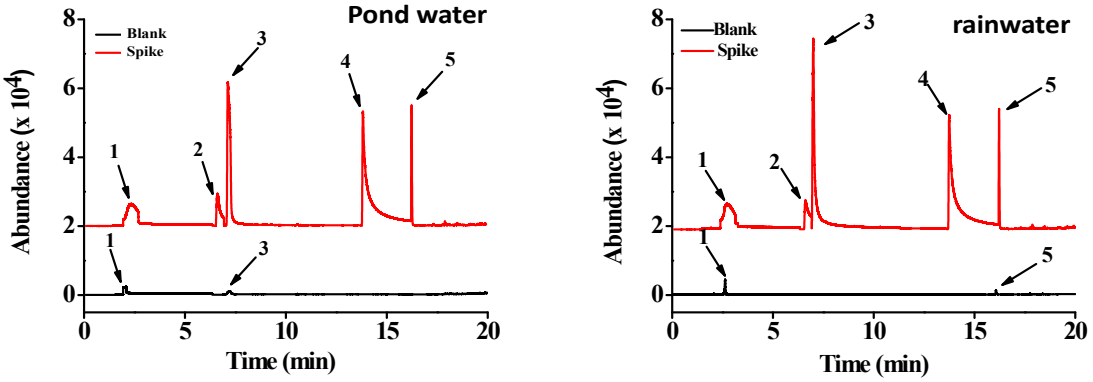
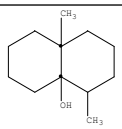
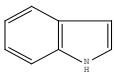
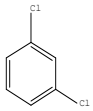
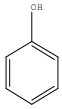


Figure S6. Chromatograms of extract VOCs and odours from real samples. (spiked 70 μg L^{-1} benzene (1), 110 μg L^{-1} Phenol (2), 0.25 μg L^{-1} 1,3-Dichlorobenzene (3), 4 μg L^{-1} indole (4), 0.15 μg L^{-1} GSM (5))

Table S1 EFs for the different compounds on P-CDP-coated fiber

Compounds	Structure	Molecular weight	Quantification ions	Identification ions	EF_S
GSM		182	112(100)	125(17), 97(15)	53.5
Indole		117	117(100)	90（41）	58.1
1,3-Dichlorobenzene		147	146(100)	148(65), 111(37), 75(23)	116.1
Benzene		78	78(100)	51(22), 52(20)	105.2
Phenol		94	94(100)	66(23)	17.2