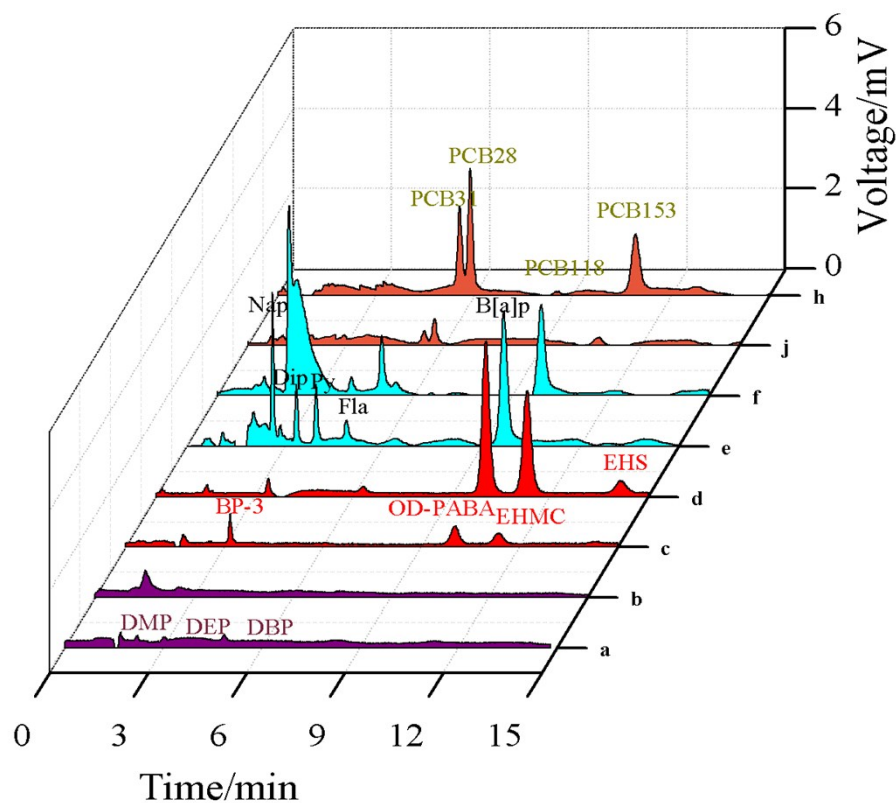


**Figure caption**



**Fig. S1** Typical chromatograms of direct HPLC for PAEs (a), UV filters (c), PAHs (e) and PCBs (j) as well as corresponding SPME-HPLC with CuO coated fiber for PAEs (b), UV filters (d), PAHs (f) and PCBs (h) for water spiked with 100  $\mu\text{g L}^{-1}$  each analyte, except for B[a]p spiked with 25  $\mu\text{g L}^{-1}$ .

Table S1 EDS result of CuO nano-coating

Element	Line style	Apparent concentration	K ratio	wt%	wt% Sigma	Standard sample label	Manufacturer's standard
C	K linear system	18.47	0.18469	6.22	0.41	C Vit	yes
O	K linear system	101.22	0.34063	8.09	0.35	SiO <sub>2</sub>	yes
Cl	K linear system	57.62	0.50354	9.87	0.71	NaCl	yes
Cu	L linear system	133.77	1.33765	33.58	1.02	Cu	yes
Au <sup>a</sup>	M linear system	137.11	1.37109	42.24	1.47	Au	yes
amount				100.00			

<sup>a</sup>. to spray on sample surface for SEM test.