Electronic supplementary material for

Self-assembled three-dimensional microporous rGO/PNT/Fe_3O_4 hydrogel sorbent for magnetic preconcentration of multi-residue insecticides

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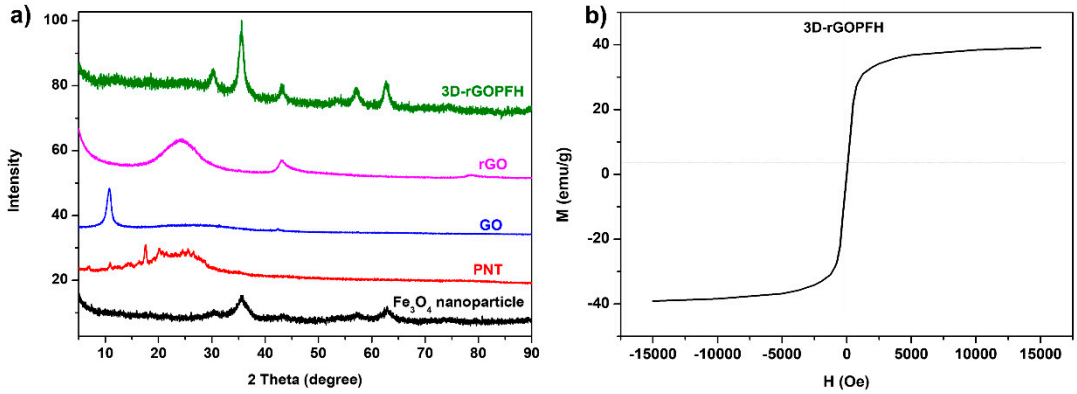


Figure S1. a) XRD analysis of GO, rGO, PNT, Fe_3O_4 nanoparticle, and 3D-rGOPFH. b) VSM magnetization curve of 3D-rGOPFH.

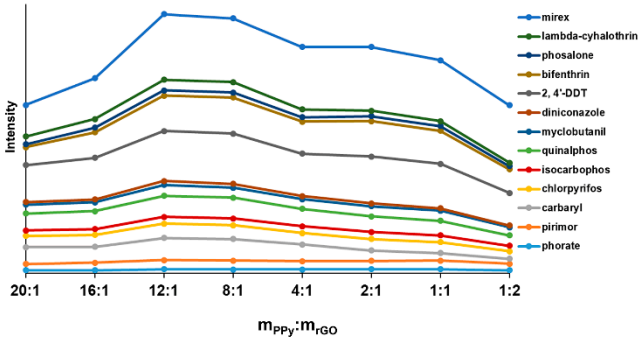


Figure S2 Effect of different loading amounts of PNT (m_{PNT} : m_{GO} =20:1, 16:1, 12:1, 8:1, 4:1, 2:1, 1:1 and 1:2) on extraction efficiency.

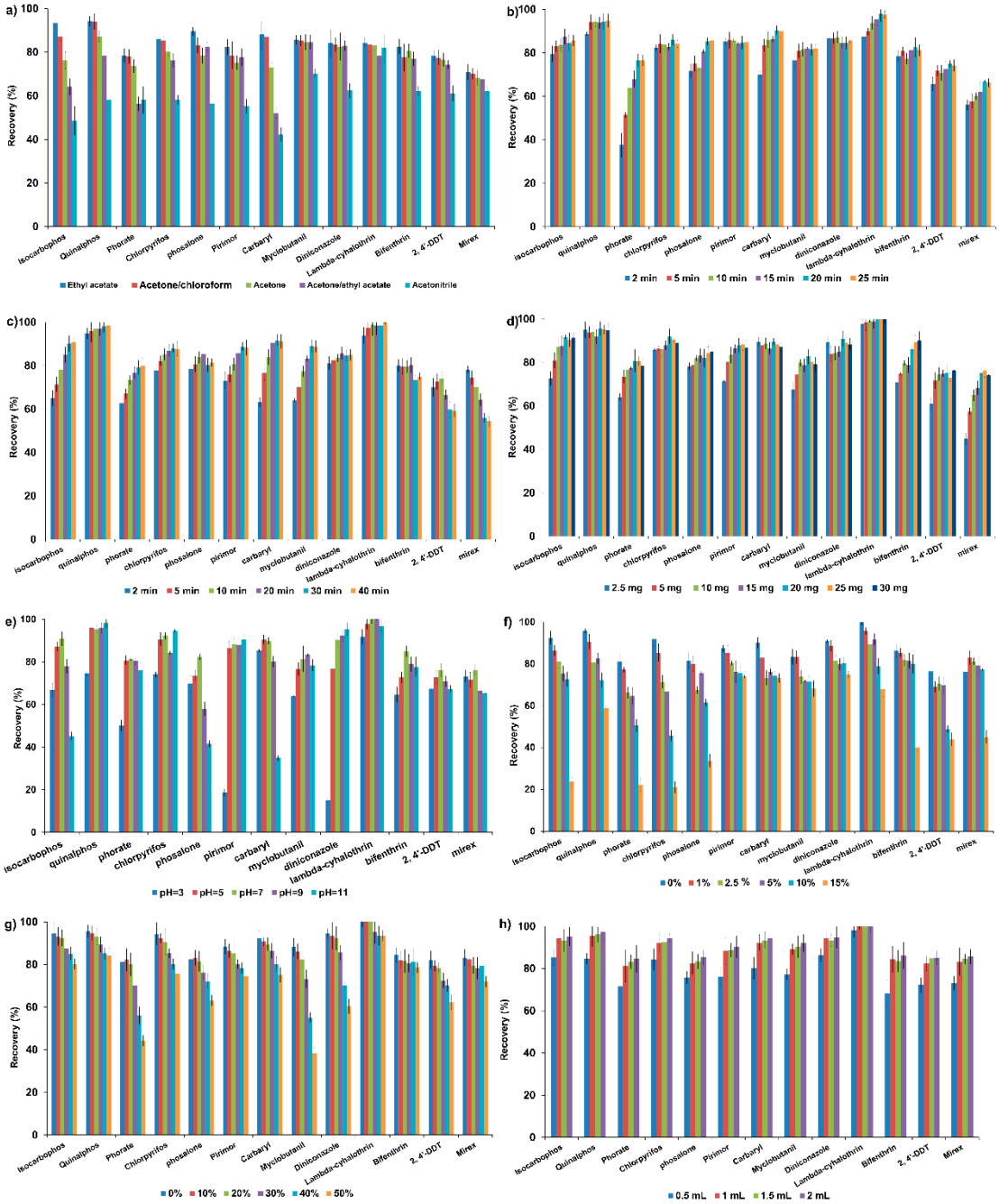
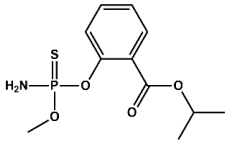
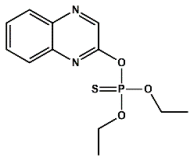
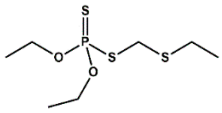
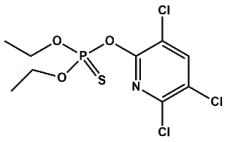
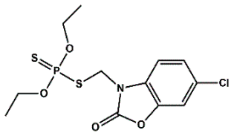
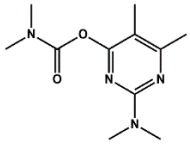
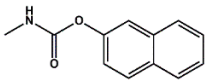
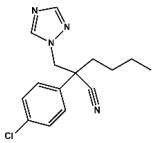
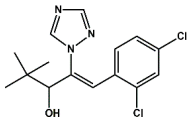
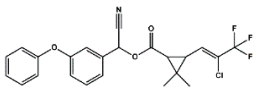
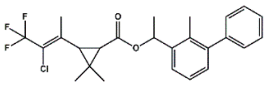
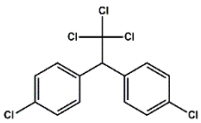
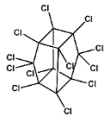


Figure S3 Effect of a) desorption solvent, b) desorption time, c) extraction time, d) sorbent dosage, e) pH, f) ionic strength, g) methanol content, and h) desorption volume on extraction efficiency of MSPE by using 3D-rGOPFH.

Table S1 Chemical structure, type, molecular weights, retention time, ion transition and Log *P* of the target compounds

Analytes	Chemical structure	Type	Molecular weight	RT (min)	Ion transition (m/z)	Log *P*
Isocarbophos		OPPs	289.29	11.51	136.0>108.0 121.0>65.1	2.71

Quinalphos		OPPs	298.30	12.34	283.0>96.1 285.0>96.1	3.04
Phorate		OPPs	260.38	9.44	260.0>75.1 231.0>128.9	3.37
Chlorpyrifos		OPPs	350.58	11.32	196.9/169.0 314.0>257.9	4.66
phosalone		OPPs	449.85	17.18	182.0>111.0 121.0>65.0	6.85
Pirimor		carbamates	238.29	10.26	238.1>166.2 166.1>96.1	1.4
Carbaryl		carbamates	201.22	10.8	144.0>115.1 115.1>89.1	2.35
Myclobutanil		triazoles	288.78	13.6	179.1>125.0 355.1>267.0	3.50
Diniconazole		triazoles	326.22	14.73	268.0>232.1 270.0>234.1	3.92
Lambda- cyhalothrin		pyrethroids	367.81	17.5	181.1>152.1 197.0>141.1	3.68
Bifenthrin		pyrethroids	422.87	16.54	181.1>166.1 181.1>165.1	8.15
2, 4'-DDT		OCPs	354.49	14.96	235.0>165.1 237.0>165.1	6.76
Mirex		OCPs	545.54	17.71	271.8>236.9 236.8>118.9	8.15

Transition ions on the black line represent quantification ions in multiple reaction monitoring mode;

Log *P* value of each pesticide was obtained from the ChemSpider (http://www.chemspider.com/Default.aspx)

Table S2. Matrix effect values of insecticides in tomato, cucumber, pakchoi sample.

Analytes	Tomato	Cucumber	Pakchoi
Isocarbophos	-2.9	-8.3	-5.1
Quinalphos	-5.6	-7.2	-2.3
Phorate	-5.4	-8.8	-9.1
Chlorpyrifos	2.7	6.0	-7.5
Phosalone	-2.9	-8.4	-6.7
Pirimor	6.1	2.7	1.8
Carbaryl	10.0	16.4	14.7
Myclobutanil	9.8	6.3	8.7
Diniconazole	2.4	6.6	9.2
Lambda-cyhalothrin	6.2	4.5	-0.9
Bifenthrin	5.6	2.3	7.7
2, 4’-DDT	2.7	7.5	-4.2
Mirex	-6.8	-8.5	-2.1