Supporting Information

Dispersive solid-phase extraction using microporous sorbent UiO-66 coupled to gas chromatography-tandem mass spectrometry: A QuEChERS-type method for the determination of organophosphorus pesticide residues in edible vegetable oils without matrix interference

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Preparation of samples for FT-IR and UV-Vis DRS analysis.

The dichlorovos, dimethoate, methidathion and malathion were respectively dissolved in 10 mL *n*-hexane, then UiO-66 was added (pesticide/UiO-66 mass ratio was 0.1). These suspensions were stirred for 6 h and dried at room temperature. The dried samples were collected and used for the FT-IR and UV-Vis DRS analysis.

Table S1. LODs, LOQs, recoveries, RSDs, and matrix effect (ME) for the determination of pyrethroids in apple juice.

pesticides	LODs (ng/g)	LOQs (ng/g)	spiked level 10 ng/g (n=6)		spiked level 20 ng/g (n=6)		spiked level 50 ng/g (n=6)		ME (%)
			recovery (%)	RSD (%)	recovery (%)	RSD (%)	recovery (%)	RSD (%)	
bifenthrin	1.5	4.6	68.9	5.7	71.0	8.0	70.4	7.3	-4.6
cyhalothrin	0.8	3.0	95.7	10.3	93.3	9.0	96.6	12.0	-1.2
permethrin	0.9	2.9	95.5	13.9	116.8	5.2	119.0	9.0	9.9
fenvalerate	1.0	3.6	102.6	13.2	119.0	10.3	108.2	7.0	19.1

Figure S1. Characterization of the UIO-66: X-ray diffraction (XRD) patterns of the as-synthesized UiO-66 and simulated UIO-66 (A); and N_2 sorption isotherm of the as-synthesized UiO-66 (B).

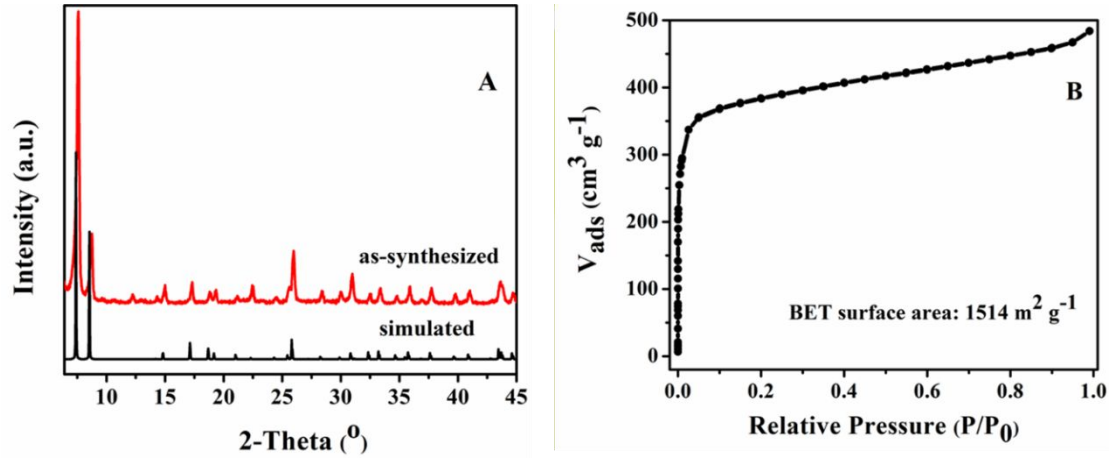
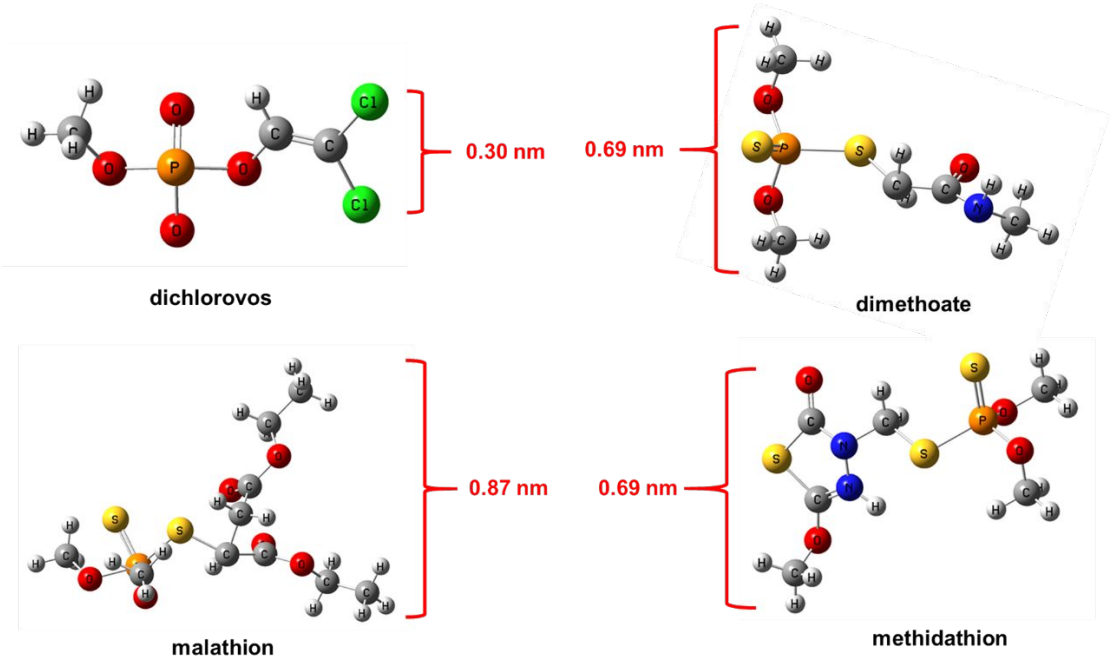


Figure S1

Figure S2. The pesticide structures optimized by Gaussian 09W program package together with the Gview 5.0.



Gaussian 09W program package together with the Gview 5.0 [1] have been employed to perform all calculations including Single point energy of 4 compounds by (no symmetry constraint) Becke's 3-parameter hybrid exchange functional joined with Lee-Yang-Parr's gradient corrected correlation functional B3LYP [2-3] with 6-31+G(d) basis-set.[4] We obtained the size of the 4 compounds from different directions. All calculations have been performed in Inner Mongolia Key Laboratory of Photoelectric Functional Materials.

REFERENCES

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