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Electronic Supplementary Material For

NH_2-MIL-125(Ti)/Reduced Graphene Oxide Enhanced Electrochemical Detection of Fenitrothion in Agricultural Products

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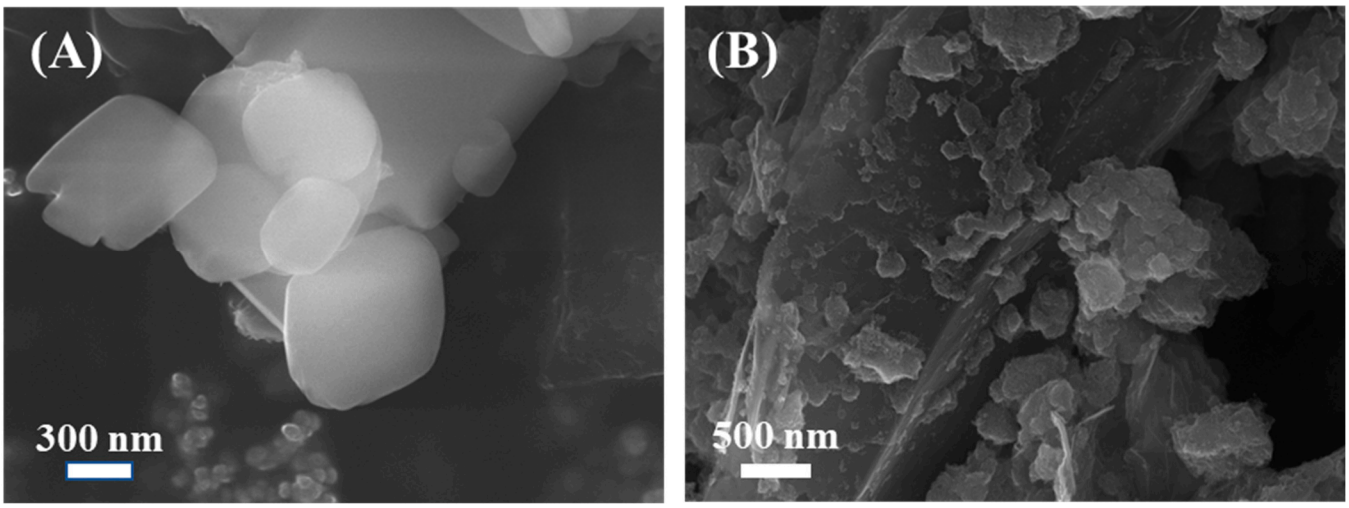

Figure S1. SEM images of (A) NH_2–MIL–125(Ti) and (B) NH_2–MIL–125(Ti)/RGO

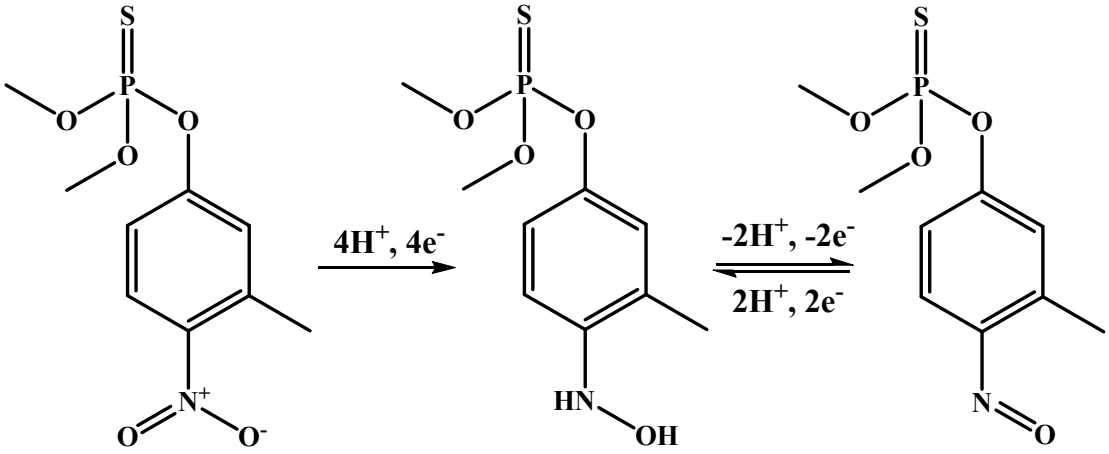

Figure S2. The electrochemical mechanism of the FT at the NH_2−MIL−125(Ti)/RGO/GCE

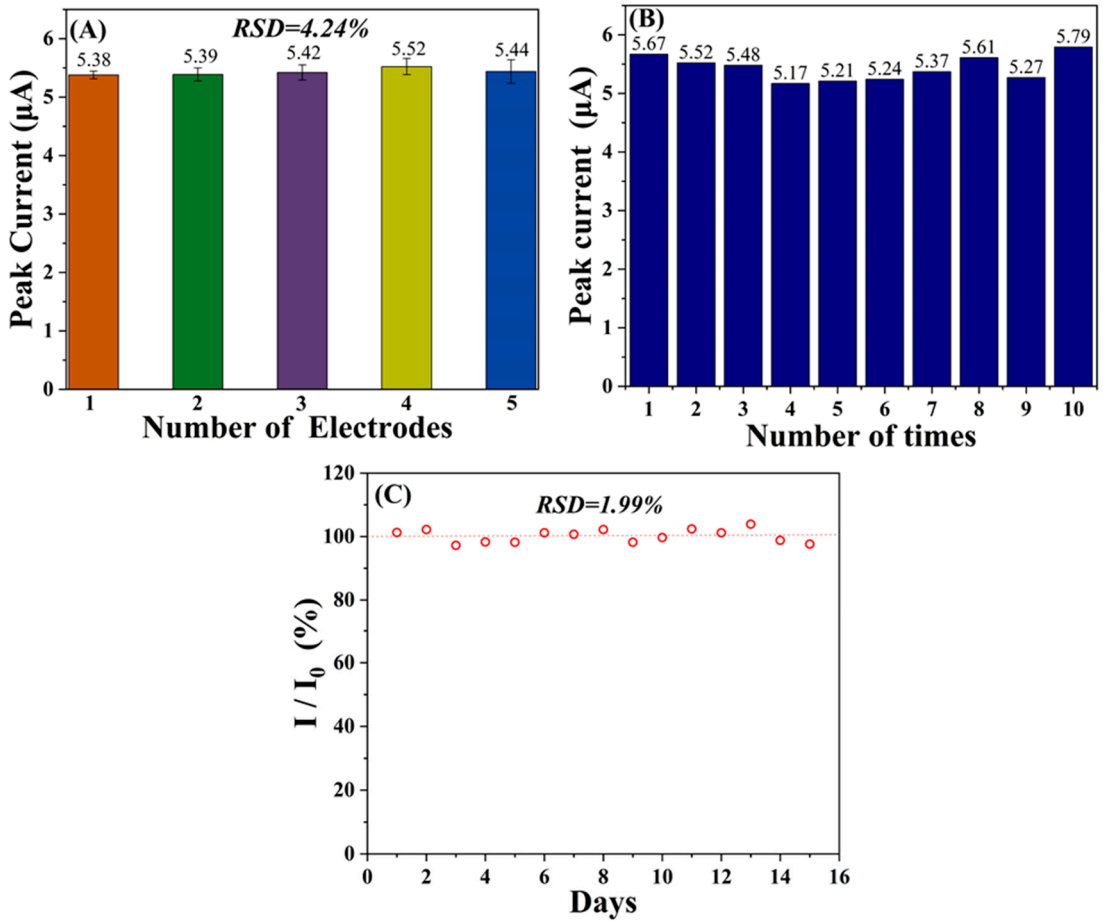

Figure S3. (A) Reproducibility, (B) Repeatability and (C) Stability measurements of 360 μM FT using the NH_2−MIL−125(Ti)/RGO/GCE in 0.1 M PBS (pH 6.0).

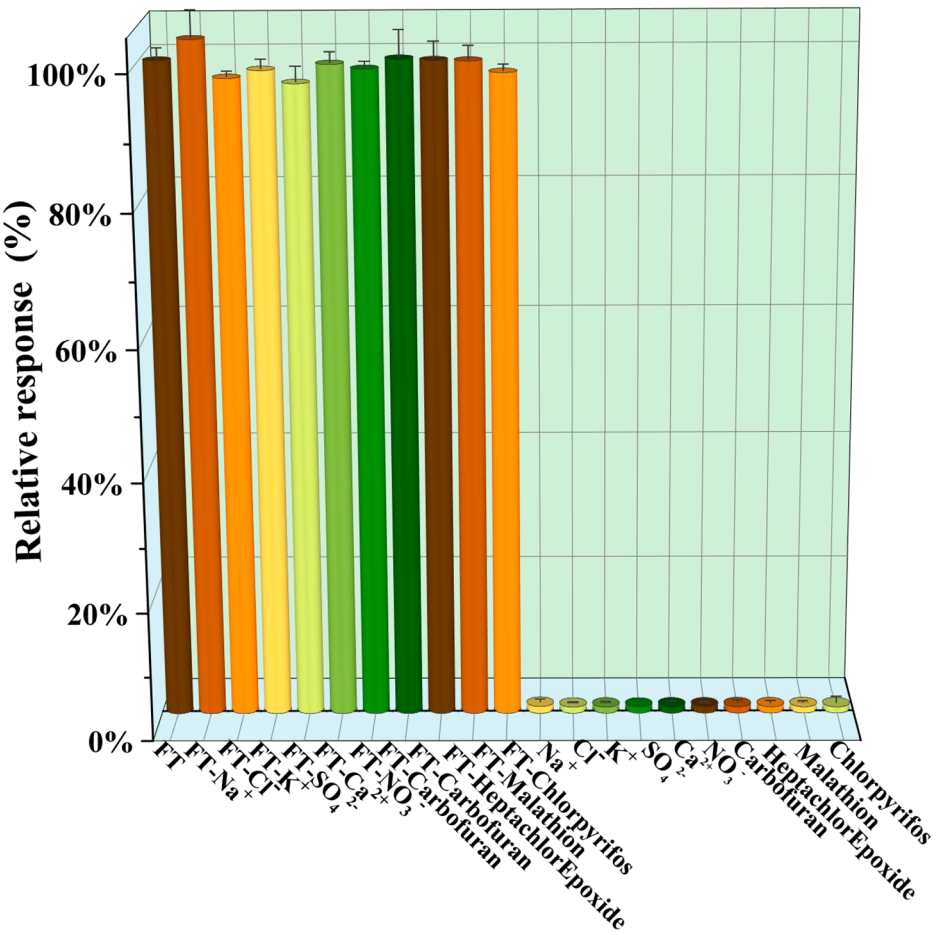

Figure S4. Selectivity of the developed electrochemical sensor for FT against other interferents. (from left to right: FT, FT−Na^+, FT−Cl^-, FT−K^+, FT−SO_4^{2-}, FT−Ca^{2+}, FT−NO_3^-, FT−Carbofuran, FT−Trans−Heptachlor Epoxide, FT−Malathion, FT−Chlorpyrifos, Na^+, Cl^-, K^+, SO_4^{2-}, Ca^{2+}, NO_3^-, Carbofuran, Trans−Heptachlor Epoxide, Malathion, Chlorpyrifos). The concentration is 360 μM for FT and 3.6 mM for other interferents.The error lines indicates the mean standard error of the three measurements. The error bars represent average standard error for three measurements.

Table S1 Comparative study of performances of different electrochemical sensors for detection of FT

No.	Materials used	Sample	Linear Ranges (μM)	LOD (μM)	Ref.
1	Poly(purpald)−PGE	apple juice, water	25–200	17.39	[1]
2	TiO_2/Nafion/GCE	water	0.2–4	0.0866	[2]
3	PHA/mPEG/SPE	tap water	1–10	0.61	[3]
4	MWCNTs−GCE	river water	0.2–60	0.08	[4]
5	Pretreated GCE	tap water, human urine	0.4–50	0.078	[5]
6	Ni(II) MIP−SPCE	forest matrices	3.00–100	0.08	[6]
7	CoPc/GCE	/	1.20–42.0	0.46	[7]
8	SiO_2/CNTs/RuPc	orange juice	3–66	0.162	[8]
9	SWCNH−ZE/GCE	natural water, orange juice	0.99–12	0.012	[9]
10	IL@$CoFe_2O_4$NPs@MWCNTs	fruit extract	0.02–160	0.0135	[10]
11	NH_2−MIL−125(Ti)/RGO	agricultural products extract (rice, wheat, grape, peach, cucumber, tomato)	0.072–18	0.0338	This work

CV: cyclic voltammetry; EIS: electrochemical impedance spectroscopy; DPV: differential pulse voltammetry; PGE: pencil graphite electrode; GR: graphene; GCE: glassy carbon electrode; MWCNTs: multi−walled carbon nanotubes; RGO: reduced graphene oxide; SPCE: Screen Printed Carbon Electrodes; AuNPs: gold nanoparticles; CNTs: carbon nanotubes; RuPc: ruthenium phthalocyanine; ZE: zein; IL: ionic liquid; $CoFe_2O_4$NPs: cobalt ferrite nanoparticles; mPEG: poly(ethylene glycol) methyl ether; PHA: polyhydroxyalkanoates; CoPc: Cobalt phthalocyanine.

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