Supplementary material

A New Plant-esterase Inhibition Based Electrochemical Sensor with Signal Amplification by MoS_2@N-CDs for Chlorpyrifos Detection

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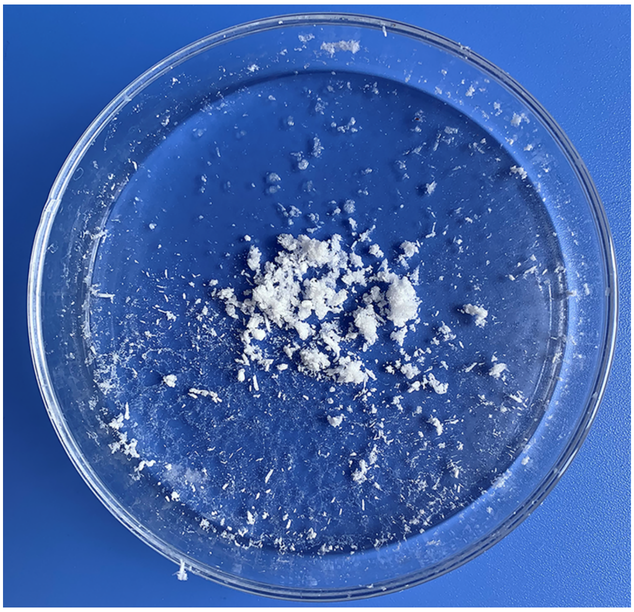

Fig. S1 kidney bean esterase powder.

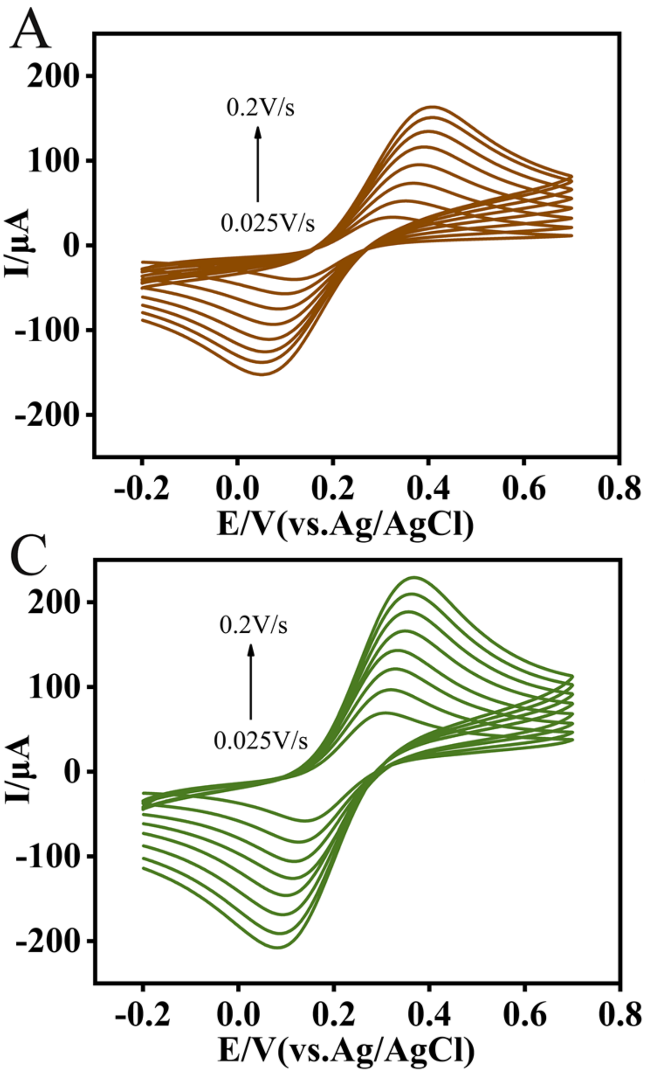

Fig. S2 Cyclic voltammetry of different modified electrodes at different scan rate: GCE **(A)**, MoS_2/GCE **(B)**, MoS_2@N-CDs/GCE **(C)**, Au/MoS_2@N-CDs/GCE **(D)**

Table S1 The fitting results of Nyquist curves in Fig. 2 B with Randles equivalent circuit model

Electrodes	Rs(Ω)	CPE1-T(F)	CPE1-P	Rct(Ω)	W-R	W-T	W-P	Chi-square
GCE	112.2	2.7995E-6	0.89154	1079	2654	23.25	0.46591	0.0014672
MoS_2/GCE	113	2.8395E-6	0.87766	730.8	14.42	0.00019	0.2296	0.00059338
MoS_2@N-CDs/GCE	121.4	6.4938E-6	0.8597	482.6	8.945	0.00025	0.24268	0.0005122
AuNPs/MoS_2@N-CDs/GCE	100.3	9.2788E-6	0.76941	95.6	816.8	2.436	0.44218	0.0009263
CS/KbPE/AuNPs/MoS_2@N-CDs/GCE	114.2	2.561E-6	0.89791	966.9	4.386	0.00011	0.27946	0.0018158

Table S2 The detection performance of different CPF detection methods in real samples

Method	Samples	Recoveries (%)	RSD (%)	Ref
colorimetry	Water, cabbage	94.30~110.20	1.10~15.40	1
electrochemiluminescence	pakchoi, lettuce apple	94.24~99.33	0.84~4.60	2
MIP-ECL	apple, lettuce	97.83~103.62	1.58~3.59	3
CuNWs/rGO/SPCE	water, orange juice	96.67~105.65	2.01~3.84	4
AChE-Chit/ SnO_2/Nb_2CTx/GCE	tap water	98.70~100.70	0.51~2.1	5
MXene/AuPt/AChE-CS/GCE	apple, cabbage	95.44~102.81	2.60~5.30	6
AChE-CS/NF-HZnO@CoO-NPCs/GCE	water	98.50~102.70	1.20~1.70	7
Au-$MoSe_2$-PC-GCE	sea water, paddy water, pond water	97.90~106.60	1.80~3.80	8
CS/KdBE/GNPs/MoS_2@N-CDs/GCE	oilseed rape, cabbage	98.09~106.01	2.20~5.23	This work

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