Supplementary Information

Exploring the Electrocatalytic application of Two-Dimensional Samarium Molybdate (γ-$Sm_3(MoO_4)_3$) Nanoplatelets for Selective Sensing of Organophosphate Insecticide Oxyparathion

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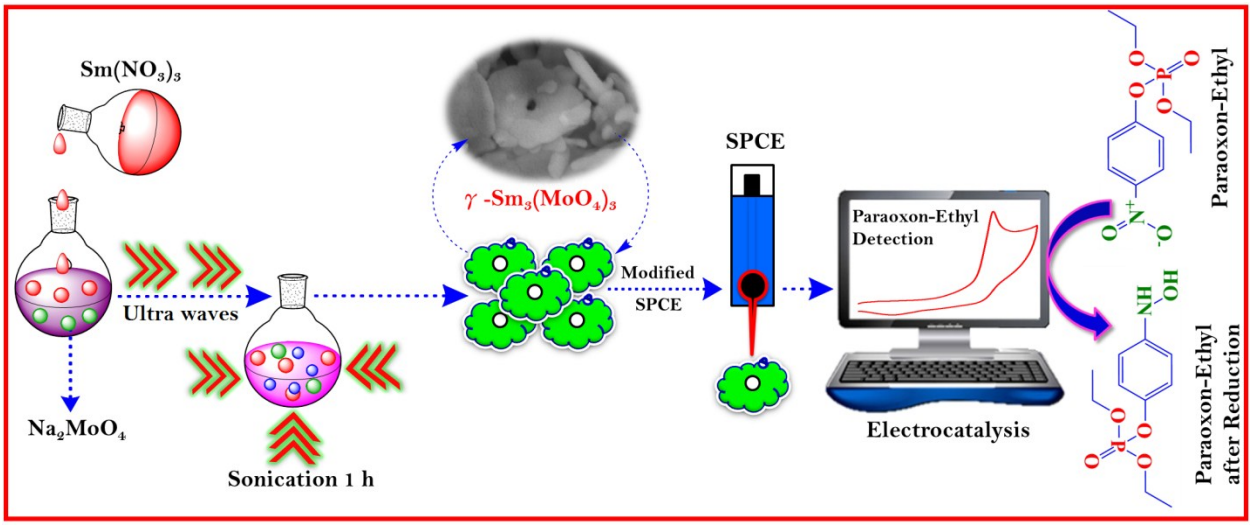
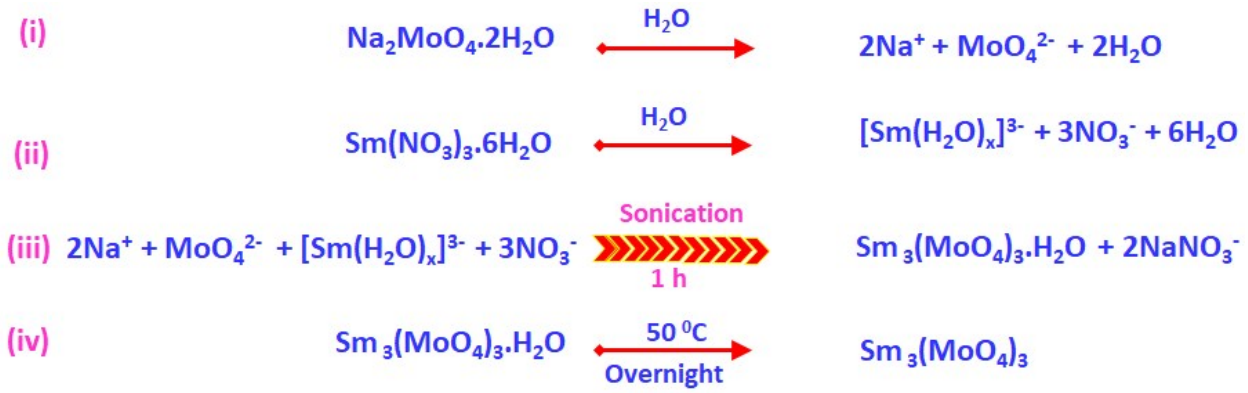


Scheme. S1. Schematic illustration of the synthetic procedure for the synthesis of SmM NPs and its electrochemical applications.



Scheme S2. The formation mechanism of $Sm_3(MoO_4)_3$ NPs.

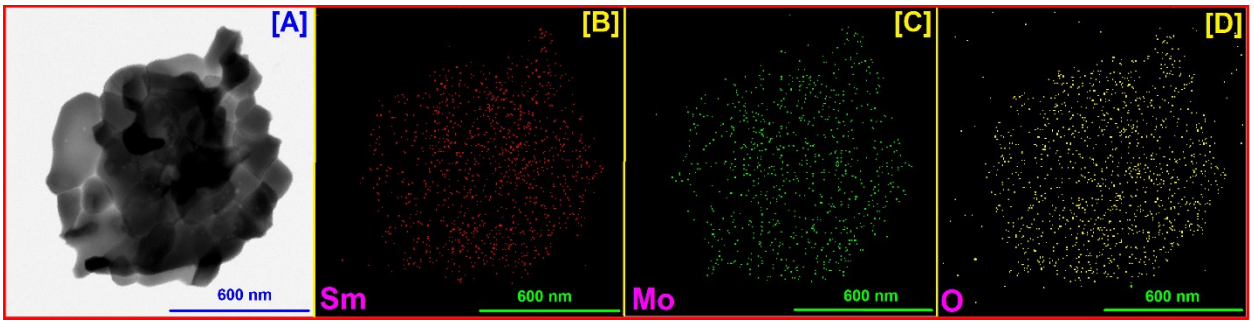


Fig. S1. (A)Elemental mapping analysis of SmM NPs; Sm (B), Mo (C) and O (D).

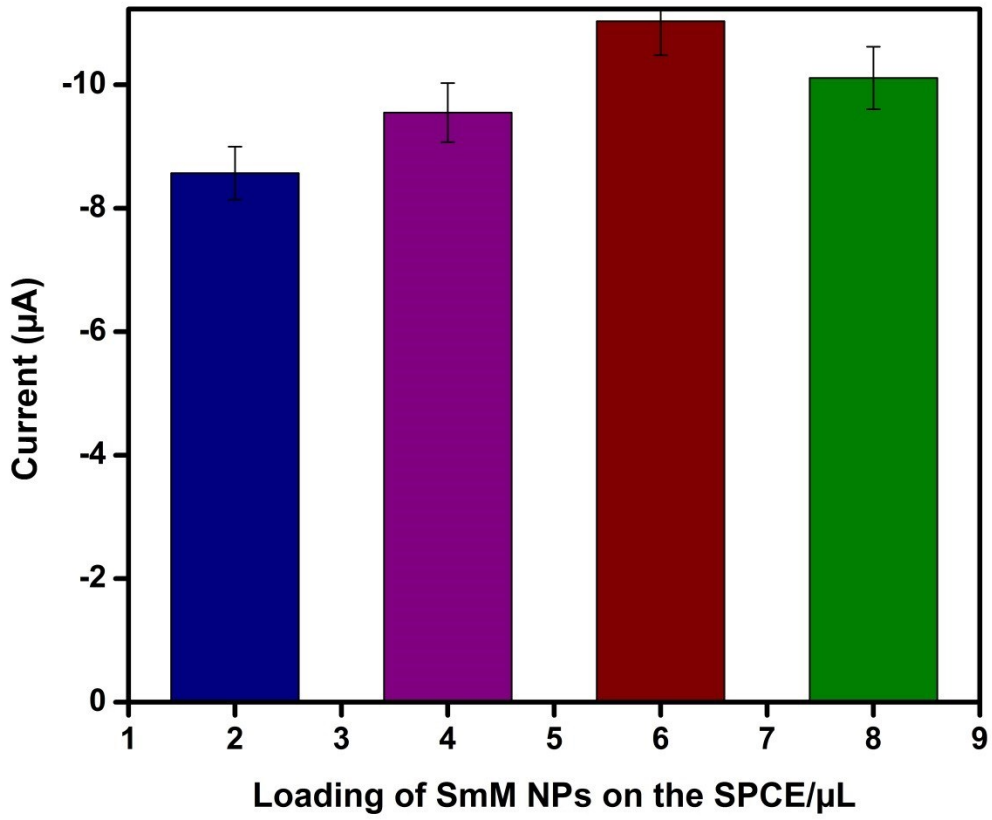


Fig. S2. The calibration plot for the loading of different amount of SmM NPs suspension on the SPCE towards OP detection.

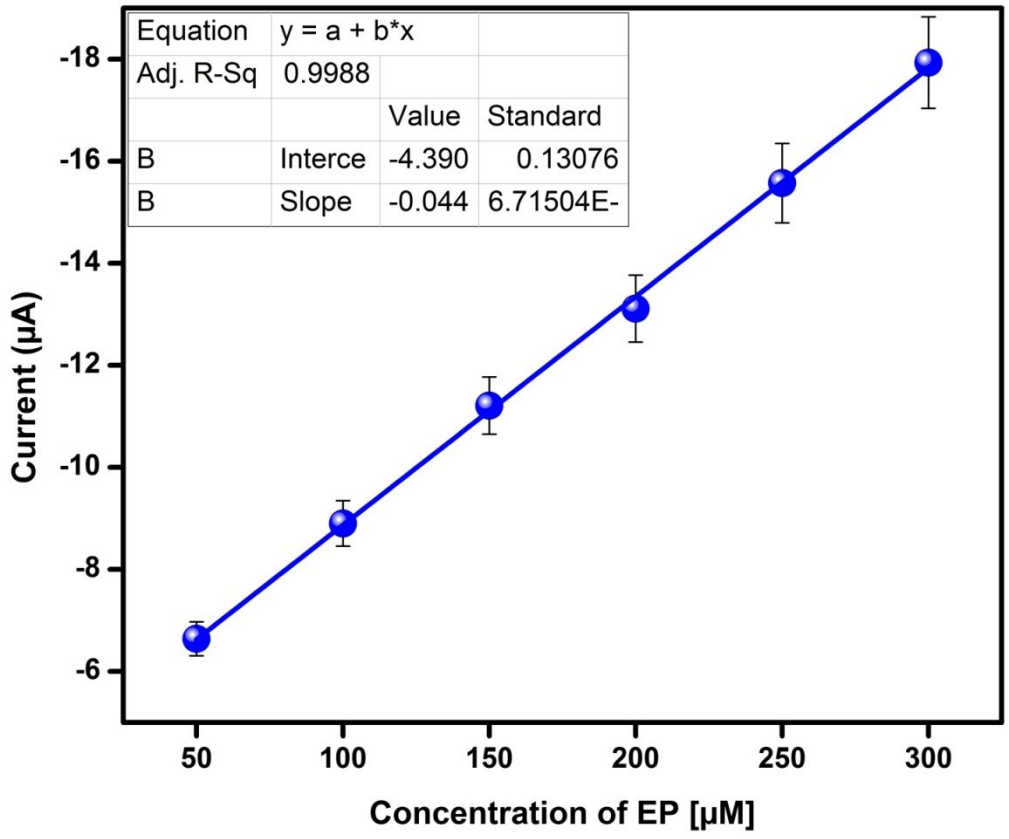
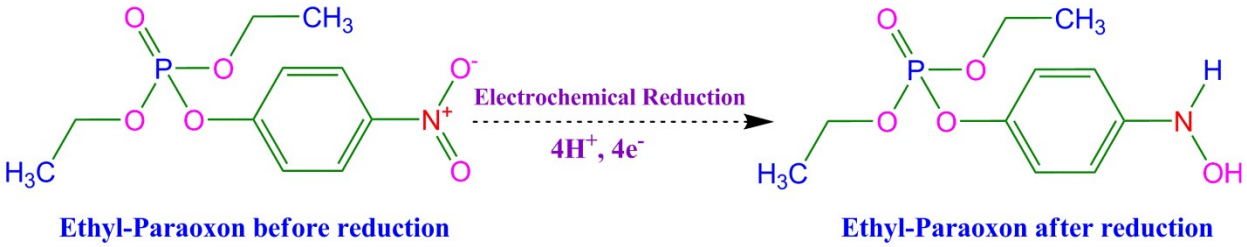


Fig. S3. The linear plot for concentration of EP vs. cathodic peak current.



Scheme. S3. Possible electrochemical reduction mechanisms of EP on the SmM NPs/SPCE.

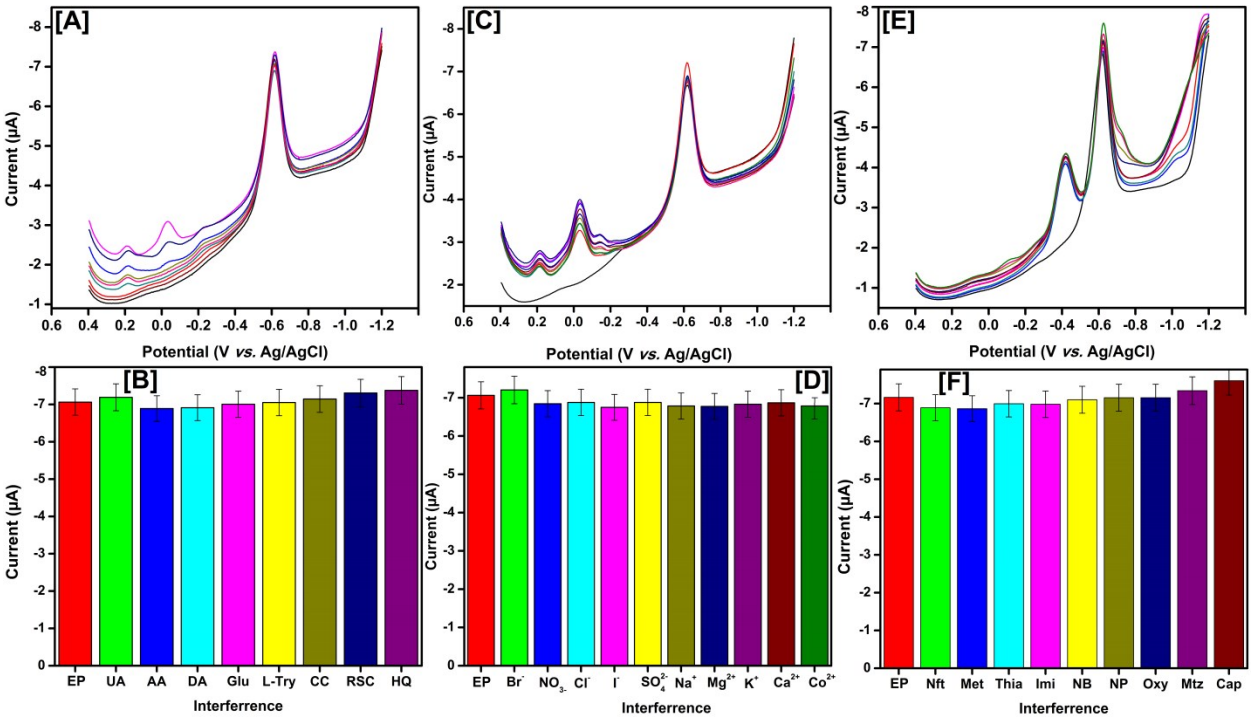


Fig. S4. The DPV responses of OP reduction in the occurrence of potentially co-interfering species (A) biological compounds: UA, AA, DA, Glu, L-Try, CC, RSC and HQ (Calibration plot B). (C) Inorganic species: Co^{2+}, Ca^{2+}, K^{+}, Mg^{2+}, Na^{+}, SO_4^{2-}, I^{-}, Cl^{-}, NO_{3-}, and Br^{-}(Calibration plot D). (E) Nitro group containing pollutants, pesticides and drugs: Nft, Met, Thia, Imi, NB, NP, Oxy, Mtz and Cap (Calibration plot F).

Table. S1. Real sample analysis

Samples	Added (µM)	Found (µM)	Recovery (%)
Soil	0.00	0.00	-
	0.1	0.089	89.0
	0.5	0.42	84.0
Tab water	0.00	0.00	-
	0.1	0.101	101.0
	0.5	0.498	99.6

Lake water	0.00	0.00	-
	0.1	0.096	96.0
	0.5	0.491	98.2