

Supporting Information

Dual-signal fenamithion probe by combining fluorescence with colorimetry based on Rhodamine B modified silver nanoparticles

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Experiment section

Treatment of Real Samples

Treatment of Waters from the Yangtze and the East Lake Real water samples collected from Yangtze River and East Lake (Wuhan, China) were first filtered through a standard 0.2 μm filter, then mixed with 30 mg sodium bicarbonate and boiling for about 30 minutes. Finally, the mixture was filtered with funnel for 2 times and all the water samples were spiked with fenamithion at different concentration levels and stored at ambient condition until used.

Treatment of Vegetable Samples Cabbage samples were purchased from a local market. The Vegetable samples were treated following the treatment described below. A sample treatment for extraction and cleanup was based on a one previously reported slightly modified.²⁰ Several portions of 2.5 g of cabbage were chopped and homogenized for 4h with 50mL of ethanol. The mixture was first was filtered with funnel for 2 times, then collected liquid was spiked with fenamithion at different concentration levels and stored at ambient condition until used.

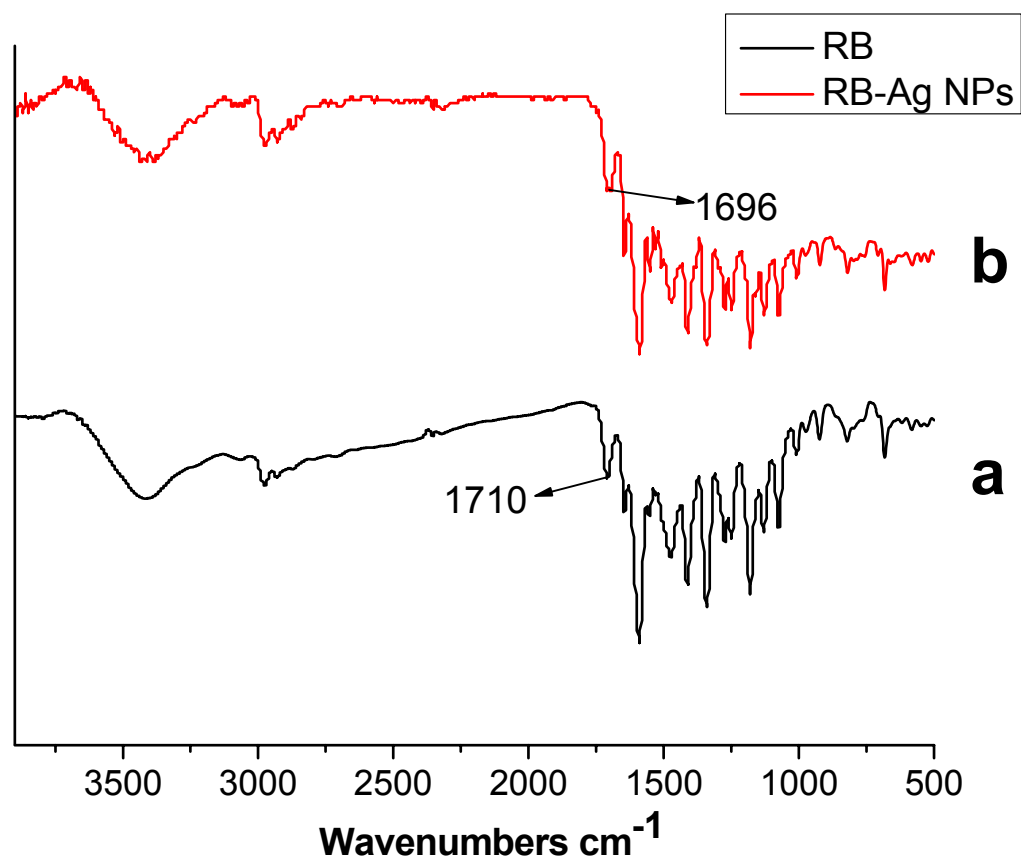


Fig. S1. IR spectra of (a) pure RB and (b) RB-Ag NPs

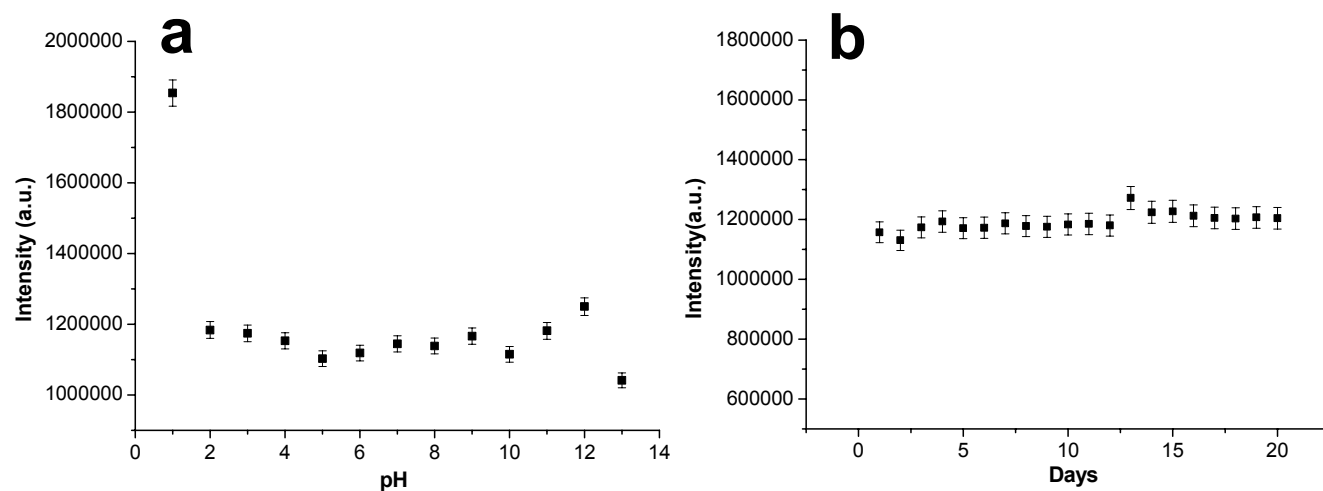


Fig. S2. The stability of RB-Ag NPs (a) effect of pH to fluorescence spectra of RB-Ag NPs and (b) fluorescence spectra of RB-Ag NPs recorded on different times.

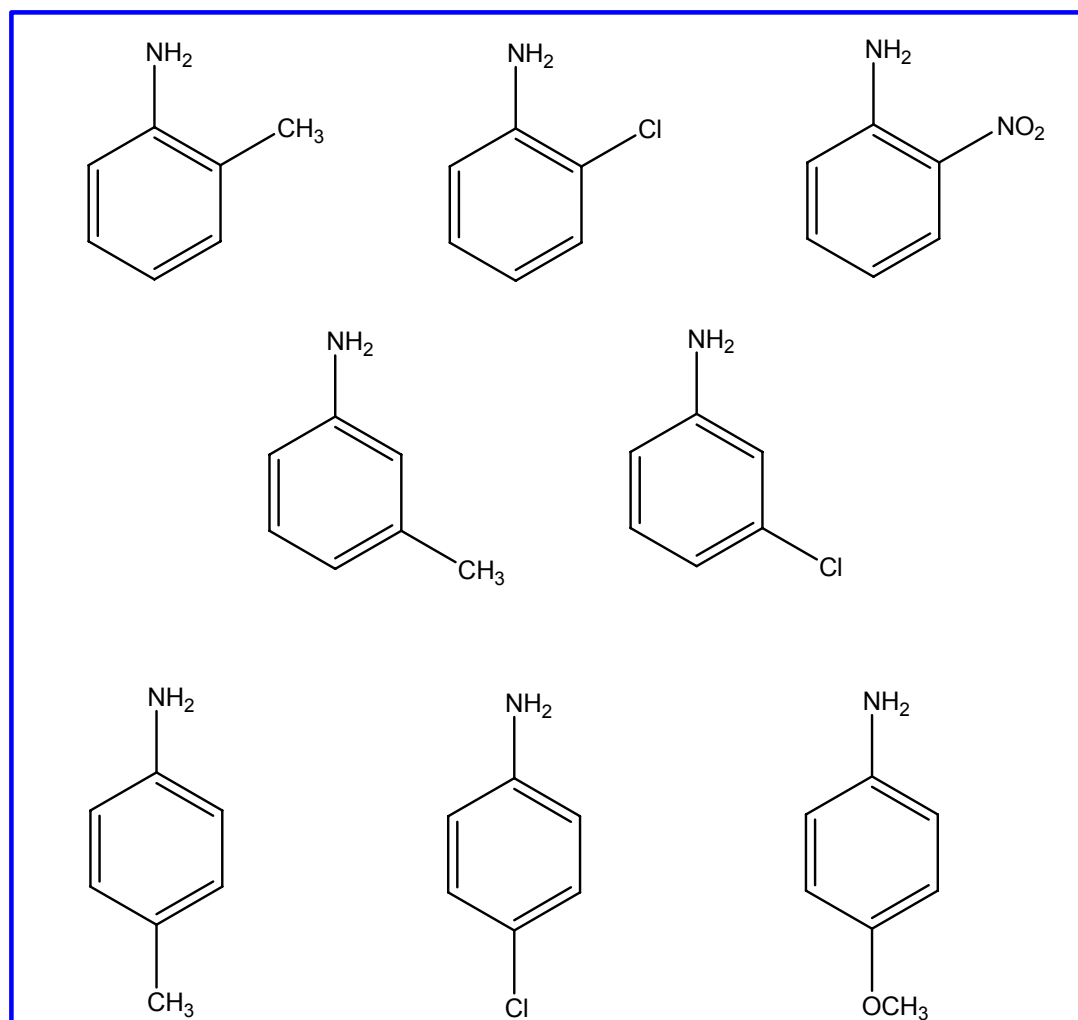


Fig. S3. The chemical structures of phenylamine derivatives investigated

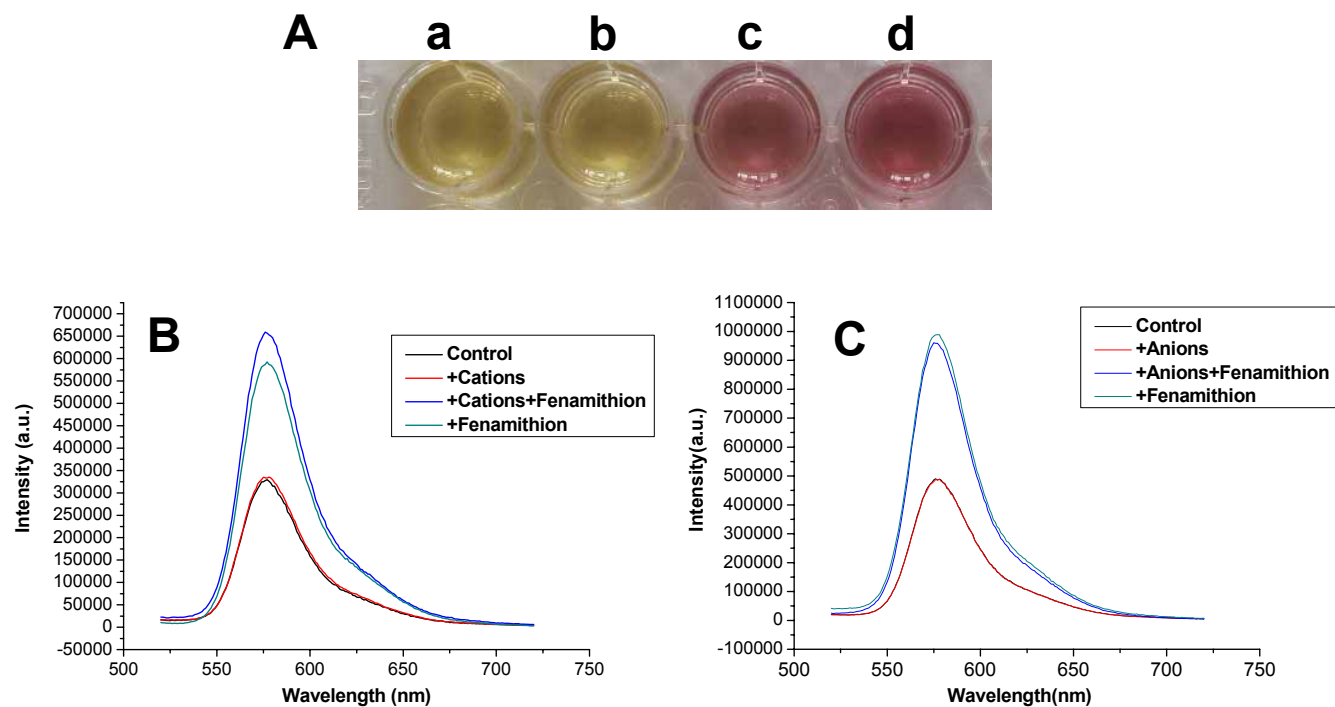


Fig. S4. The photographic images (A), fluorescence spectra of RB-Ag NPs upon addition fenamithion in the matrices of various interfering cations (B) and anions (C). From a to d, they represent RB-Ag NPs, RB-Ag NPs in the matrices solution, addition of fenamithion in RB-Ag NPs (matrices solution) and addition of fenamithion in RB-Ag NPs, respectively.

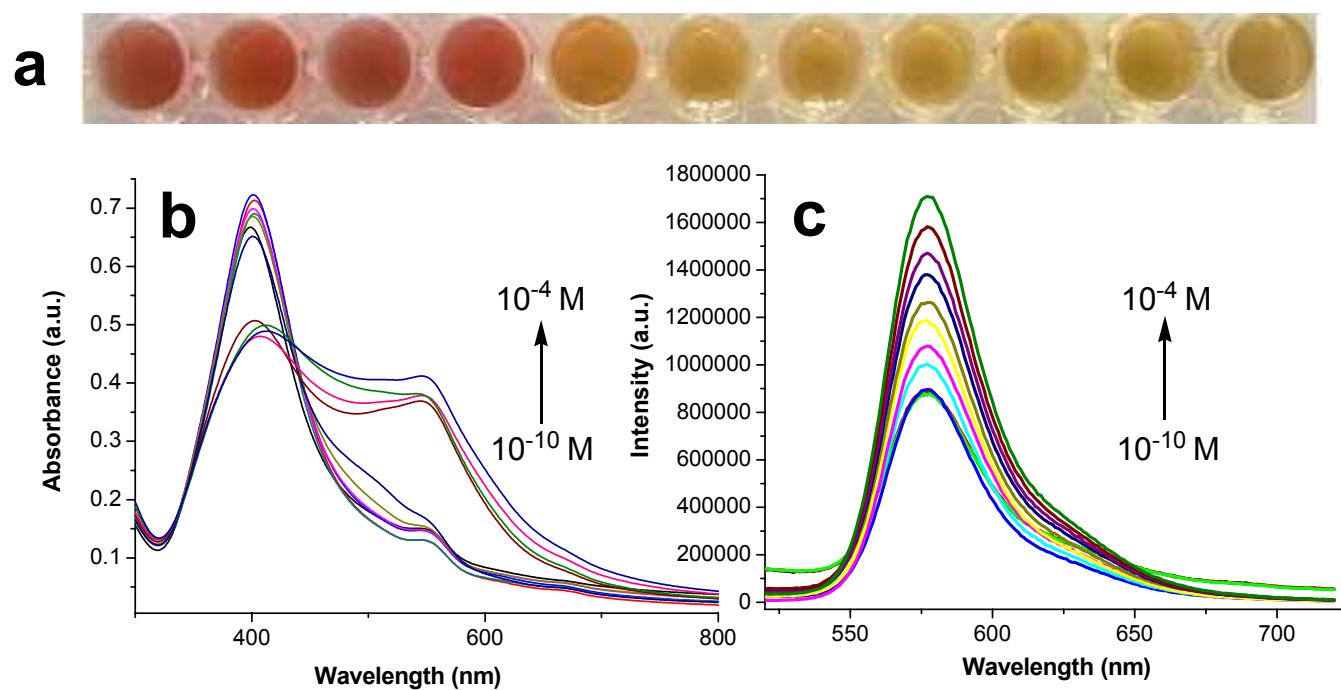


Fig. S5. The photographic images, UV-visible spectra (a) and Fluorescence spectra (b) of RB-Ag NPs with various concentrations of fenamithion in cabbage sample ranging from 1×10^{-10} M to 1×10^{-4} M.

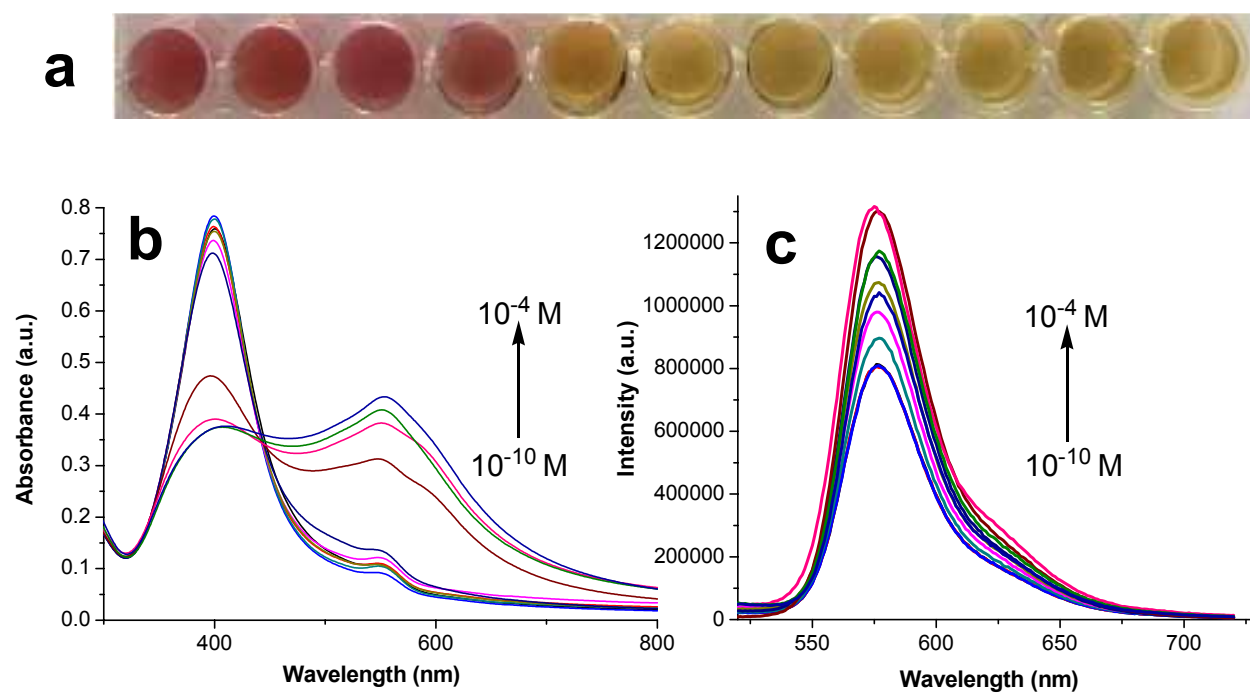


Fig. S6. The photographic images, UV-visible spectra (a) and Fluorescence spectra (b) of RB-Ag NPs with various concentrations of fenamithion in the East Lake sample ranging from 1×10^{-10} M to 1×10^{-4} M.