Supporting Information

Fig. S1 SERS Spectral curve of 0.3mM thiram on apple surface enhanced by Au@Ag NRs. Red curve is a pristine spectrum while blue curve is the filtered spectrum after Fast Fourier Transform and Band-pass filter background pretreatment.
Fig. S 2 (a) Concentration-dependent SERS spectra and (b) dose-response curve of thiram using Au@Ag NRs as substrate. Inset is the partial enlargement of data points from $1.3 \times 10^{-6}$M to blank on horizontal axis. (The LOD of thiram in Au@Ag NRs is $\sim 1.5 \times 10^{-7}$M)
Fig. S 3 (a) Concentration-dependent SERS spectra and (b) dose-response curve (at 675 cm$^{-1}$) of methamidophos (MTD) using Au@Ag NRs as substrate. Inset is the partial enlargement of data points from 1.1×10$^{-4}$M to blank on horizontal axis. (The LOD of MTD in Au@Ag NRs is ~6.8×10$^{-6}$M)
Fig. S 4 (a) Concentration-dependent SERS spectra and (b) dose-response curve of thiram using GNRs as substrate. Inset is the partial enlargement of data points from $1.3 \times 10^{-6}$M to blank on horizontal axis. (The LOD of thiram in GNRs is $4.6 \times 10^{-7}$M)
Fig. S 5 (a) Concentration-dependent SERS spectra and (b) dose-response curve (at 675 cm\(^{-1}\)) of methamidophos (MTD) using GNRs as substrate. (The LOD of MTD in GNRs is \(\sim 8.8 \times 10^{-4} \text{M}\))
Fig. S 6 (a) Concentration-dependent SERS spectra and (b) dose-response curve of thiram on apple peels using GNRs as substrate. Inset is the partial enlargement of data points from $4 \times 10^{-6}$M to blank on the horizontal axis. (The LOD of thiram on apple by enhancement of GNRs is $1.2 \times 10^{-5}$M).