Fabrication of GO/Fe₃O₄@Au MNPs for Magnetically Enriched and Adsorptive SERS Detection of Bifenthrin

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Calculation of the limit of detection (LOD)[1]

The calculation of LOD is based on the reference[1]:

$$I_L = I_B + k \times S_B \qquad (1)$$

In this equation, I_L represents the minimum SERS signal intensity that can be detected, I_B represents the average SERS intensity of the blank sample, S_B represents the standard deviation, and k is a numerical factor chosen according to the desired confidence level. According to the linear regression equation Y =-0.000341156x+7.83793, the LOD could be calculated as 7.122 µg/kg.
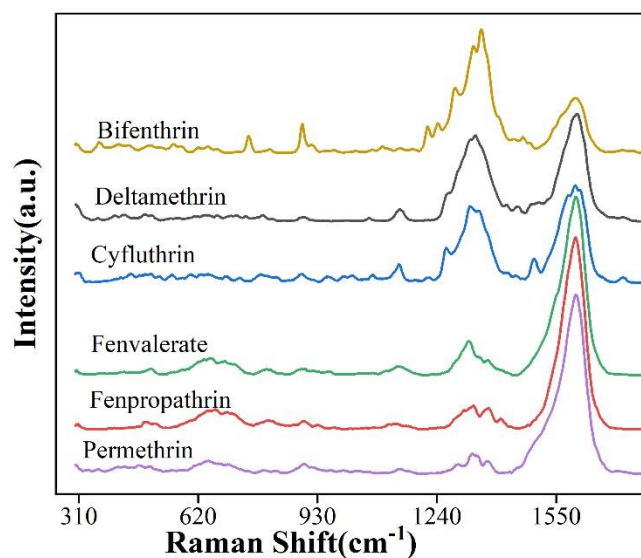

Figure S1. SERS spectra of bifenthrin and its structural analogues based on GO/Fe₃O₄@Au MNPs.

1. Shrivastava, A.; Gupta, V. Methods for the determination of limit of detection and limit of quantitation of the analytical methods. Chronicles of Young Scientists 2011, 2, 21-25, doi:10.4103/2229-5186.79345.