Highly sensitive SERS sensor for malachite green detection based on spiky Fe_3O_4@Au supraparticles

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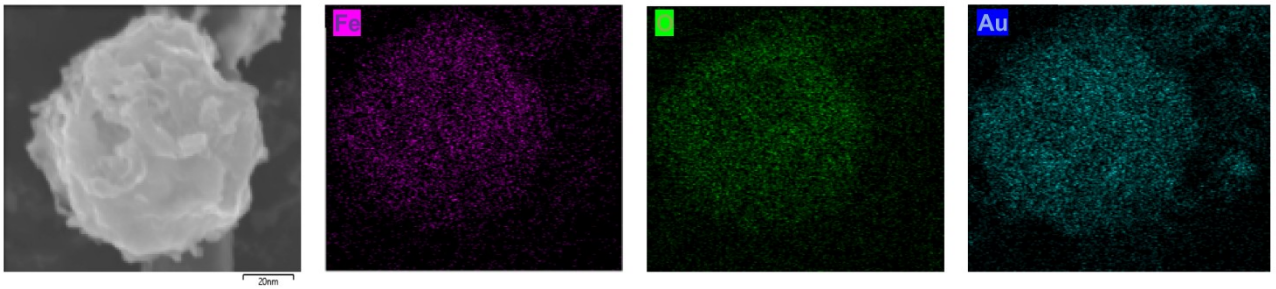

Fig.S1 The element mapping result of Fe_3O_4@AuSPs-1

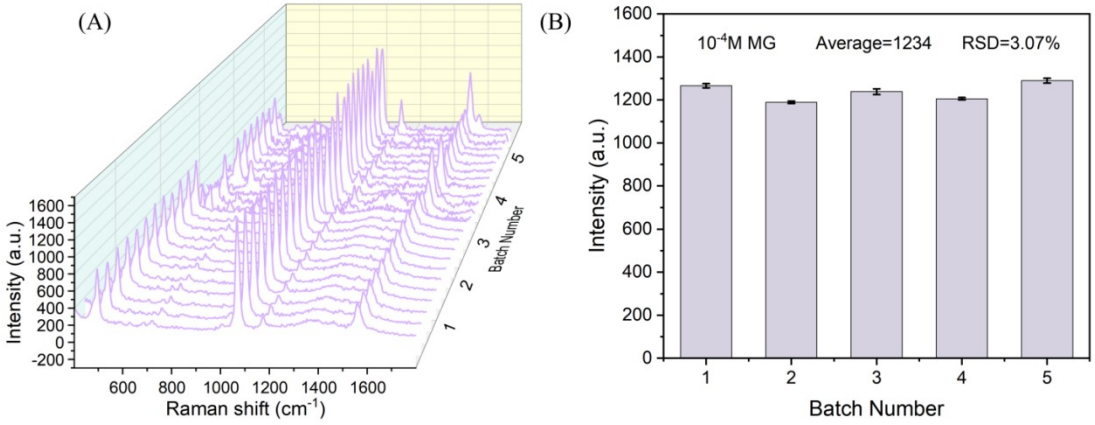

Fig. S2 The reproducibility of the spike morphologies of the Fe_3O_4@AuSPs with 5 batches (10^{-4} M of MG)

Table S1 Different SERS substrates for MG detection, LOD and linear detection range.

SERS substrates	LOD (mol/L)	Linear detection range (mol/L)	References
Cu MOF	3.2×10^{-12}	4×10^{-12}-10^{-10}	[1]
ULGNs@Ag	2.5×10^{-9}	10^{-8}-10^{-3}	[2]
Au@Ag NRs	1.58×10^{-9}	5×10^{-9}-10^{-7}	[3]
COF-Au NPs	6.2×10^{-10}	10^{-9}-10^{-5}	[4]
AgTNPs@SiO_2	4.9×10^{-13}	10^{-12}-10^{-16}	[5]
Au@Si	7.8×10^{-11}	10^{-10}-10^{-5}	[6]
Fe_3O_4@AuSPs-1	10^{-12}	10^{-12}-10^{-14}	This work

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