Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supporting Information

Suitability study of Ag nanosheet SERS substrate as a screening method for imidacloprid after QuEChERS extraction

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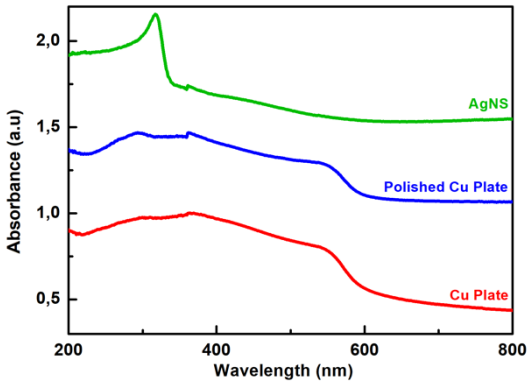

Figure S1 UV-Vis absorption spectra of the samples: Cu plate, polished Cu plate and the optimal AgNS substrate.

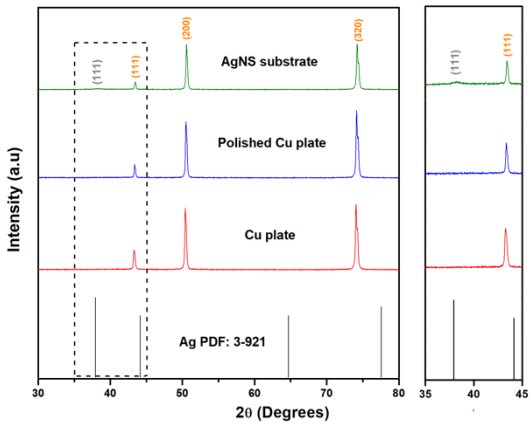

Figure S2. XRD pattern of the samples: Cu plate, polished Cu plate and the optimal Ag NS substrate.

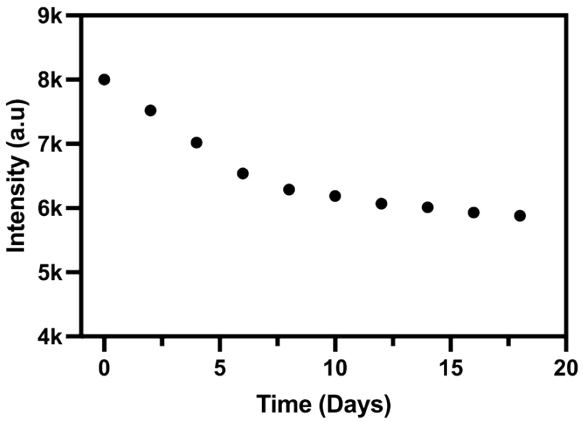

Figure S3. Relationship between the SERS intensity at the peak of 1610 cm^{-1} of methylene blue and the storage time.

Modes	Raman Shift (cm^{-1})			Assignments
	DFT	Experimental	SERS	
01	319	320		$\delta(ring1)_{out\ plane}$, $\delta(ring2)$
02	409	418	370	$\delta(ring1)_{out\ plane}$, $\delta(ring2)$, $\nu(CCl)$
03	445	471	442	$\delta(ring1)_{out\ plane}$, $\delta(ring2)$
04	481	494	506	$\delta(ring1)_{out\ plane}$, $\delta(ring2)$, $\nu(CCl)$
05	643	631	616	$\delta(ring1)_{in\ plane}$, $\delta(CN)$
06	670	658	665	$\delta(ring1)_{in\ plane}$, $\delta(CCN)$, $\nu(CCl)$,
07	697	690	694	$\delta(ring1)_{in\ plane}$, $\delta(NCNN)$, $\delta(CN)$, $\nu(CCl)$
08	778/751	750	759	$\delta(ring1)_{out\ plane}$, $\rho(CH_2)$, $\omega(NO_2)$
09	814	815	820	$\delta(CH)_{out\ plane}$, $\rho(CH_2)$
10	841	831		$\delta(CH)_{out\ plane}$, $\rho(CH_2)$
11	886	886		$\delta(ring2)$, $\rho(CH_2)$
12	958	958	932	$\delta(CN)_{in\ plane}$ $\delta(CH)_{out\ plane}$, $\omega(CH_2)$, $\tau(CH_2)$
13	985	995	994	$\nu(ring1)$, $\omega(CH_2)$
14	1057	1050	1046	$\nu(NN)$, $\nu(CN)$
15	1102	1096		$\nu(ring2)$, $\tau(CH_2)$
16	1129	1107		$\nu(ring1)$, $\nu(CCl)$
17	1165	1139	1161	$\delta(CH)_{in\ plane}$
18	1201	1200		$\tau(CH_2)$
19	1237	1243	1238	$\nu(ring2)$, $\delta(CH)_{in\ plane}$, $\tau(CH_2)$
20	1309	1276	1283	$\nu(ring1)$, $\omega(CH_2)$, $\tau(CH_2)$
21	1327	1298	1321	$\nu_s(NO_2)$, $\omega(CH_2)$, $\tau(CH_2)$
22	1390	1370	1363	$\nu_s(NO_2)$, $\delta(CH)_{in\ plane}$, $\omega(CH_2)$
23	1471	1449	1422	$\nu(CN)$, $\omega(CH_2)$, $\tau(CH_2)$
24	1498	1481	1494	$\nu(ring1)$, $\delta(CH_2)$
25	1642/1615	1567	1560	$\nu(ring1)$
26	1705/1687	1582	1600	$\nu_{as}(NO_2)$, $\nu_{as}(NCN)$, $\delta(NH)$

Table S1. Experimental, calculated and SERS vibrational frequencies for imidacloprid.

Abbreviations: *ν*, stretching; δ, bending; ω, wagging; *τ, twisting*; ρ, rocking; s, symmetric mode; as, antisymmetric mod