

Supplementary Information (SI)

CdSSe Nano-Flowers for Ultrasensitive Raman Detection of Antibiotics

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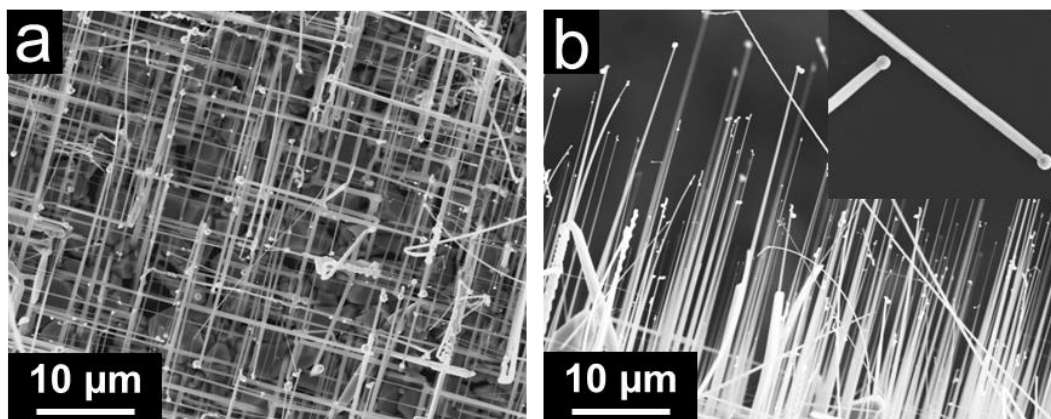


Figure S1. (a)–(b) SEM images of CdSSe NWs (inset of Figure S1b shows the single nanowire).

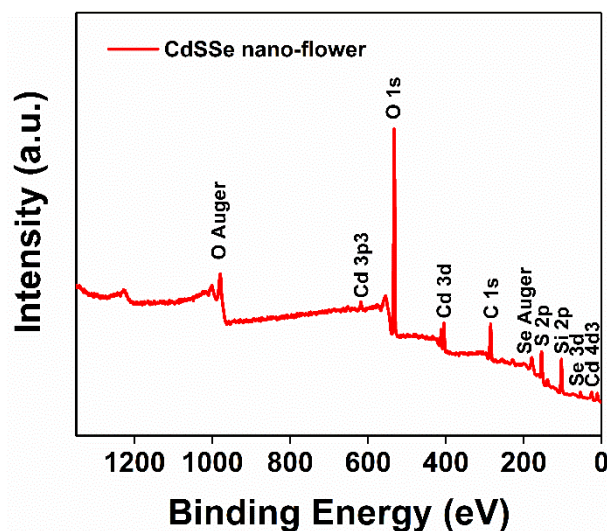


Figure S2. Wide-scan survey XPS spectrum of CdSSe NFs.

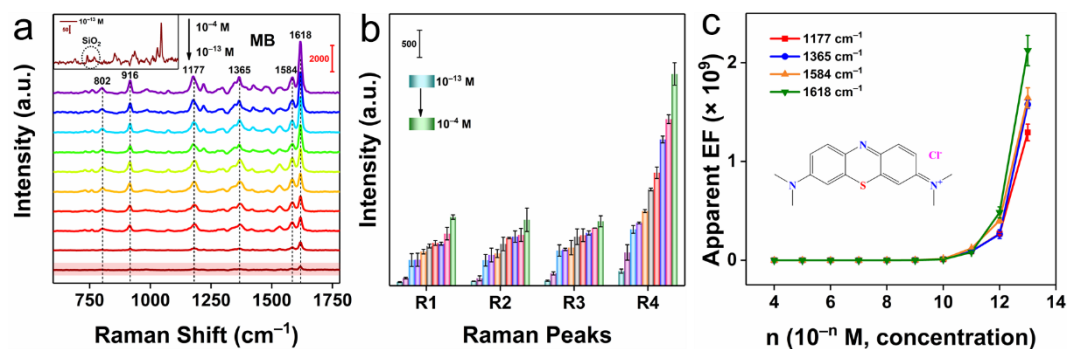


Figure S3. (a) SERS spectra, (b) statistical histogram of peak intensity (R_1 to R_4 : 1177, 1365, 1584, and 1618 cm^{-1}), and (c) apparent EF values of MB solutions at varying concentrations.

Table S1. Apparent EFs of the Raman peaks of Rh6G and MB at different concentrations.

Concentration (mol/L)	Rh6G (cm ⁻¹)				MB (cm ⁻¹)			
	1184	1362	1573	1650	1177	1365	1584	1618
10⁻⁴	6.15	5.34	5.37	5.60	24.29	23.60	21.21	30.78
10⁻⁵	45.54	41.69	39.24	44.13	184.18	175.64	166.15	242.21
10⁻⁶	408.21	358.72	352.52	350.74	1.49×10 ³	1.82×10 ³	1.61×10 ³	2.13×10 ³
10⁻⁷	3.78×10 ³	3.35×10 ³	3.34×10 ³	3.40×10 ³	1.20×10 ⁴	1.15×10 ⁴	1.16×10 ⁴	1.64×10 ⁴
10⁻⁸	1.17×10 ⁴	9.91×10 ³	1.14×10 ⁴	9.42×10 ³	1.51×10 ⁵	1.71×10 ⁵	1.90×10 ⁵	1.40×10 ⁵
10⁻⁹	1.08×10 ⁵	9.25×10 ⁴	9.91×10 ⁴	8.58×10 ⁴	1.40×10 ⁶	1.49×10 ⁶	1.74×10 ⁶	1.09×10 ⁶
10⁻¹⁰	5.87×10 ⁵	5.31×10 ⁵	5.58×10 ⁵	4.19×10 ⁵	9.19×10 ⁶	1.10×10 ⁷	1.25×10 ⁷	9.12×10 ⁶
10⁻¹¹	6.33×10 ⁶	5.21×10 ⁶	5.68×10 ⁶	4.14×10 ⁶	9.07×10 ⁷	9.09×10 ⁷	1.20×10 ⁸	8.19×10 ⁷
10⁻¹²	3.30×10 ⁷	2.25×10 ⁷	2.65×10 ⁷	2.17×10 ⁷	2.69×10 ⁸	2.64×10 ⁸	4.03×10 ⁸	4.84×10 ⁸
10⁻¹³	5.18×10 ⁸	2.59×10 ⁸	2.88×10 ⁸	1.83×10 ⁸	1.29×10 ⁹	1.58×10 ⁹	1.64×10 ⁹	2.12×10 ⁹
10⁻¹⁴	3.62×10 ⁹	1.82×10 ⁹	1.84×10 ⁹	1.79×10 ⁹	—	—	—	—

Table S2. Raman intensities (I_{Raman}) of pure Rh6G (10^{-3} M) and MB (10^{-3} M), and SERS intensities (I_{SERS}) of some peaks of Rh6G and MB at different concentrations.

Intensity (a.u.)	Rh6G (cm^{-1})				MB (cm^{-1})			
	1184	1362	1573	1650	1177	1365	1584	1618
Pure (10^{-3} M)	3021.97	10601.48	7261.61	11081.59	1039.74	1028.09	1117.89	2530.50
10^{-4} M	929.30	2828.11	1948.84	3102.55	1262.64	1212.89	1185.39	3894.64
10^{-5} M	688.17	2209.75	1424.60	2445.41	957.49	934.31	1059.75	3064.50
10^{-6} M	616.80	1901.46	1279.94	1943.40	772.39	902.89	970.84	2690.38
10^{-7} M	571.73	1774.06	1211.07	1882.05	786.20	878.23	928.67	2077.45
10^{-8} M	176.52	525.19	412.88	522.11	730.23	767.26	901.37	1769.48
10^{-9} M	163.57	490.40	359.85	475.14	626.40	592.01	700.77	1373.67
10^{-10} M	95.66	281.48	202.72	232.21	477.90	564.51	668.09	1154.46
10^{-11} M	88.65	276.18	206.38	229.56	471.74	467.47	647.75	1035.90
10^{-12} M	78.29	137.20	104.41	119.96	139.59	135.62	225.05	612.91
10^{-13} M	54.65	119.33	96.33	101.62	67.27	81.10	91.89	268.61
10^{-14} M	49.88	96.57	66.96	99.36	—	—	—	—