Supporting Information

Facile Synthesis of Size-Controllable Gold Nanoflowers on Carbon Nanotube Sheets as High-Performance Flexible SERS Sensors

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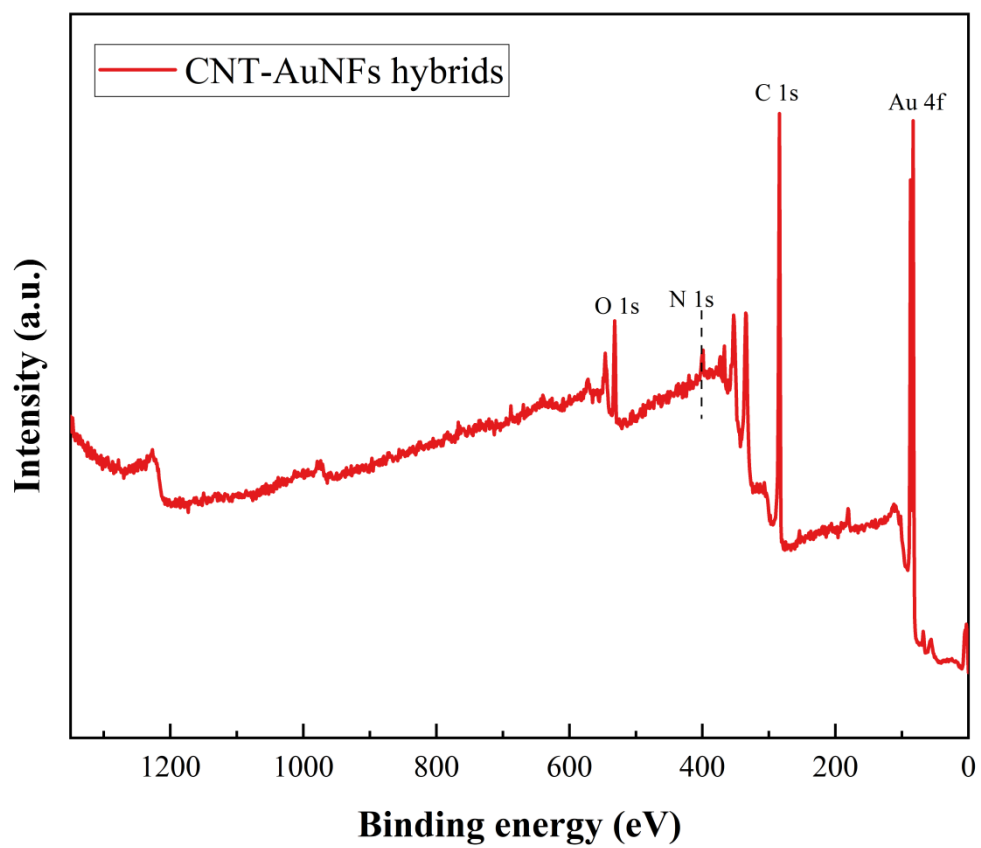
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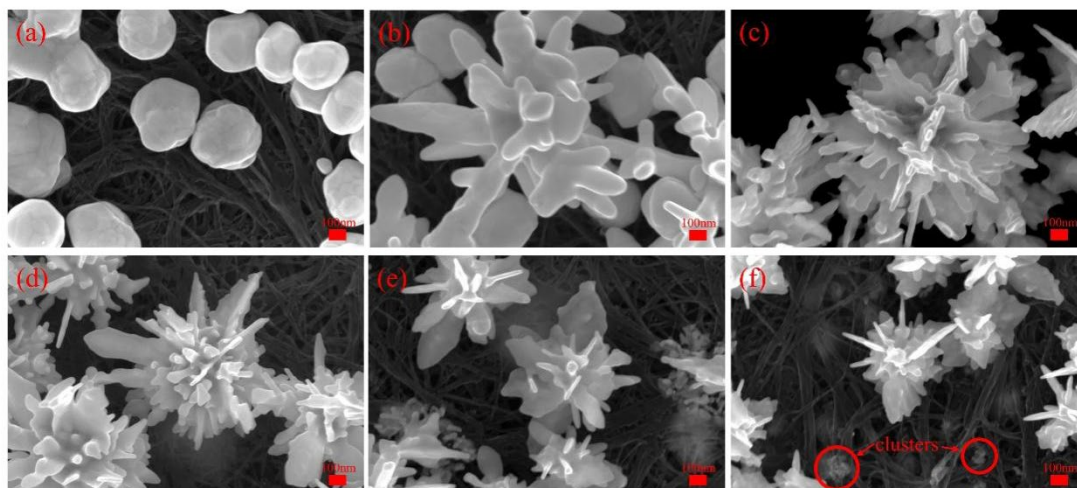*Corresponding Author: ycao@njtech.edu.cn; xinwenbo@njtech.edu.cn
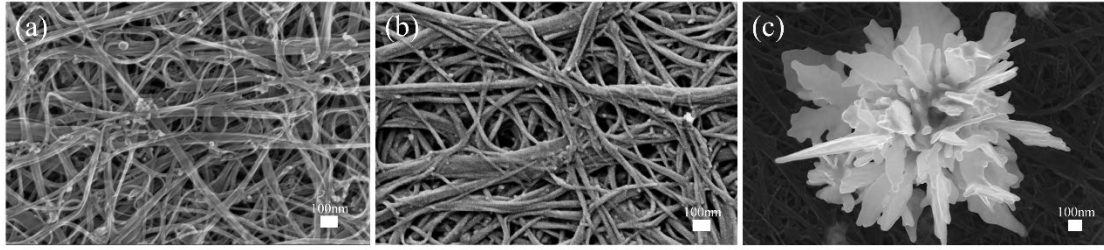
Figure S1. SEM images of (a) CNT sheets and (b) PEI-CNT hybrids at high magnification. (c) Representative SEM image of a single AuNF on CNT sheet.

Figure S2. XPS survey spectra of the CNT-AuNFs hybrids showing the peaks of Au 4f, C 1s, N 1s, and O 1s.

Figure S3. Representative SEM images of gold nanocrystals synthesized on CNT sheets with various AA concentrations at high magnification. (a) 0, (b) 0.8, (c) 2, (d) 4, (e) 8 and (f) 16 mM AA.

(a)

AA Concentration (mM)	Au NFs Diameter (nm)	Au NPs Diameter (nm)
0		374.1 ± 6.5
0.8	1418.5 ± 83.1	301.5 ± 2.2
2	1269.0 ± 31.4	
4	954.4 ± 13.2	
8	791.5 ± 59.6	
16	528.5 ± 14.3	
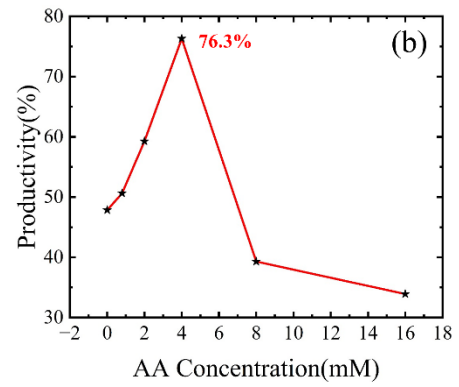
Figure S4. (a) Size distribution and (b) productivity statistics of gold nanocrystals synthesized on CNT sheets with various AA concentrations.
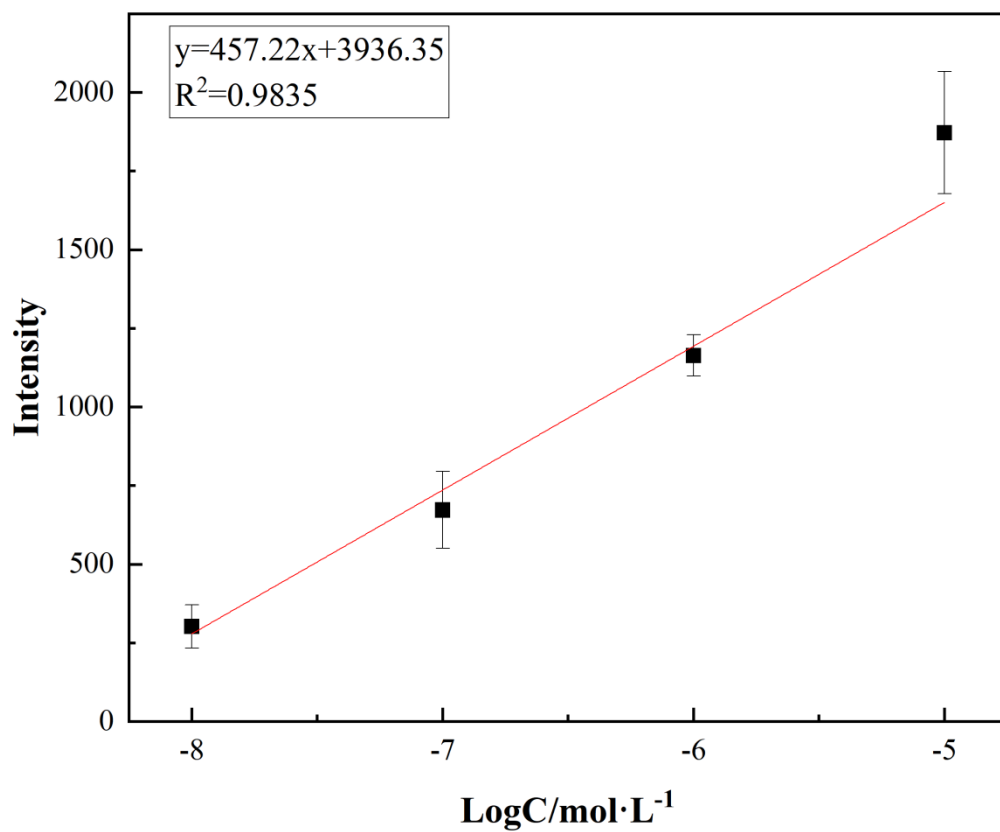
Figure S5. Plot of the linear relationship between the intensity at 1155 cm^{-1} and different concentrations of CR solutions.
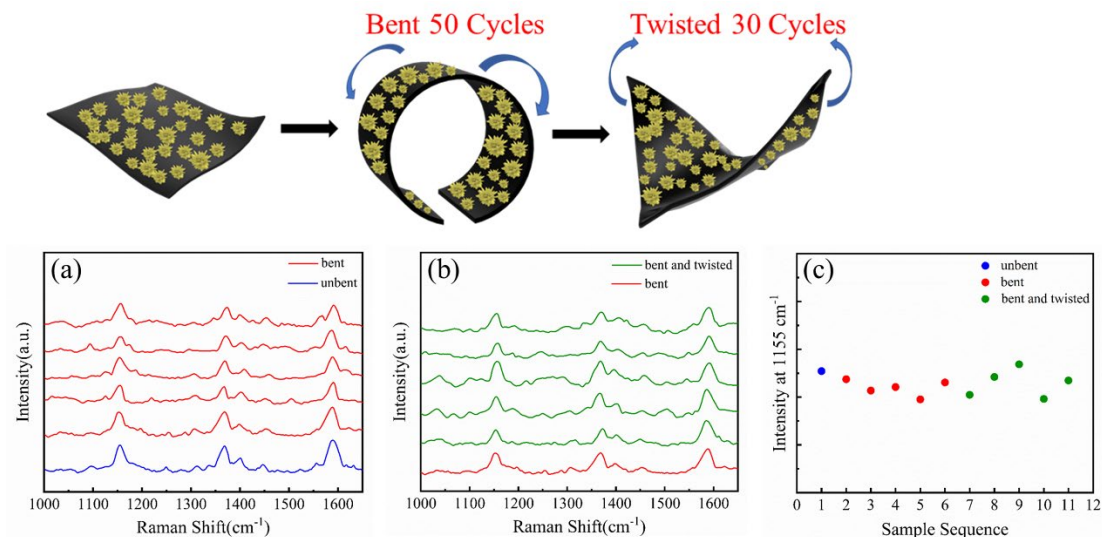
Figure S6. SERS performance of CNT sheet-Au nanoflowers after (a) 50 bending cycles and (b) then 30 twisting cycles for 1×10^{-7} M CR. (c) Intensity distribution at 1155 cm^{-1} after two mechanical stimuli.

Table S1. RSD values of predominant peaks of CR at 1×10^{-7} M

Analyte	CR(1×10^{-7}M)				
Peaks (cm^{-1})	1155	1371	1400	1449	1591
RSD (%)	18.7%	22.0%	28.2%	29.1%	19.7%