

Supporting Information

Flexible Hybrid Photodetector Based on Silver Sulfide Nanoparticles and Multi-walled Carbon Nanotubes

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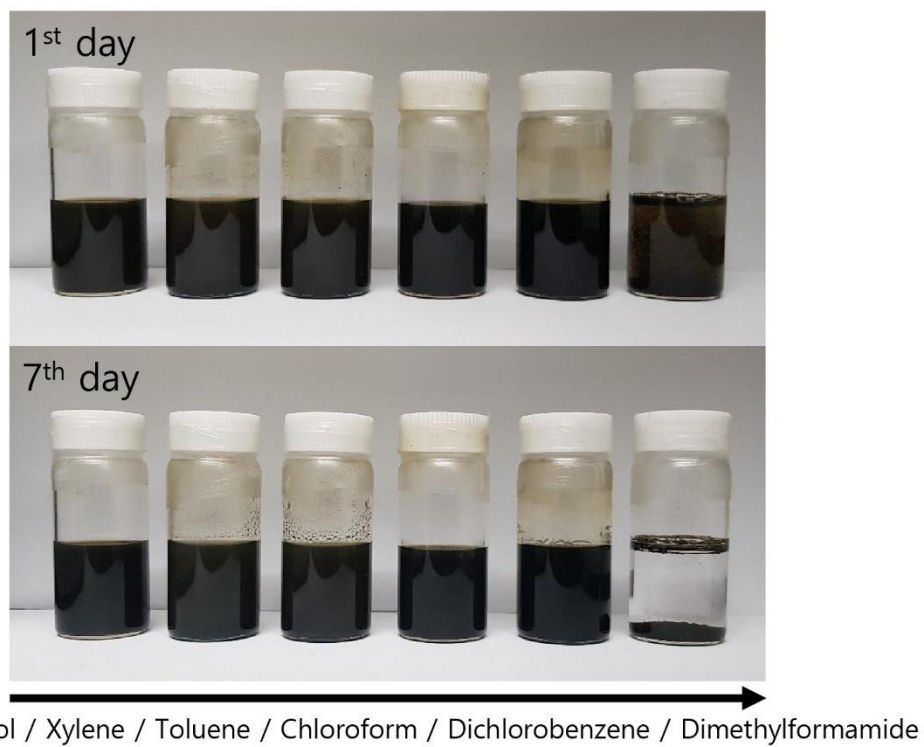


Figure S1. Solution dispersion test in different solvents.

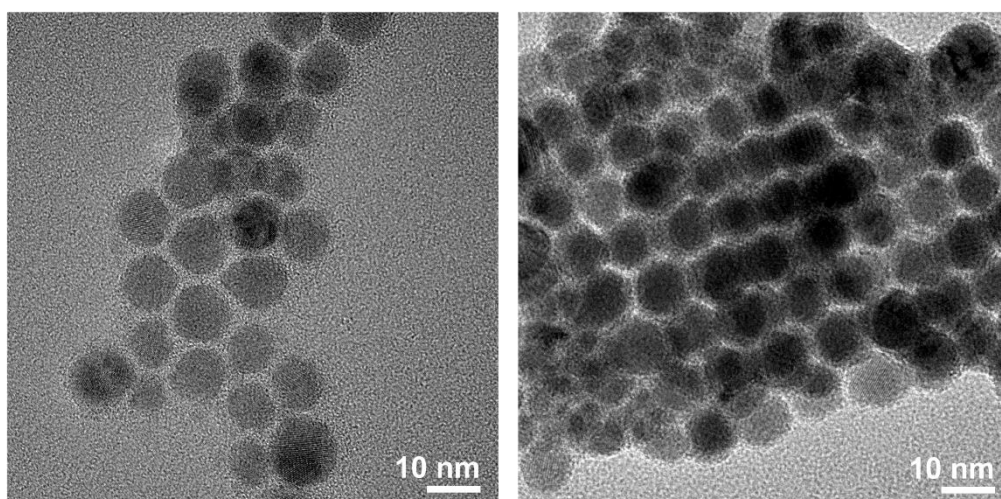


Figure S2. TEM Images of bare Ag₂S NPs.

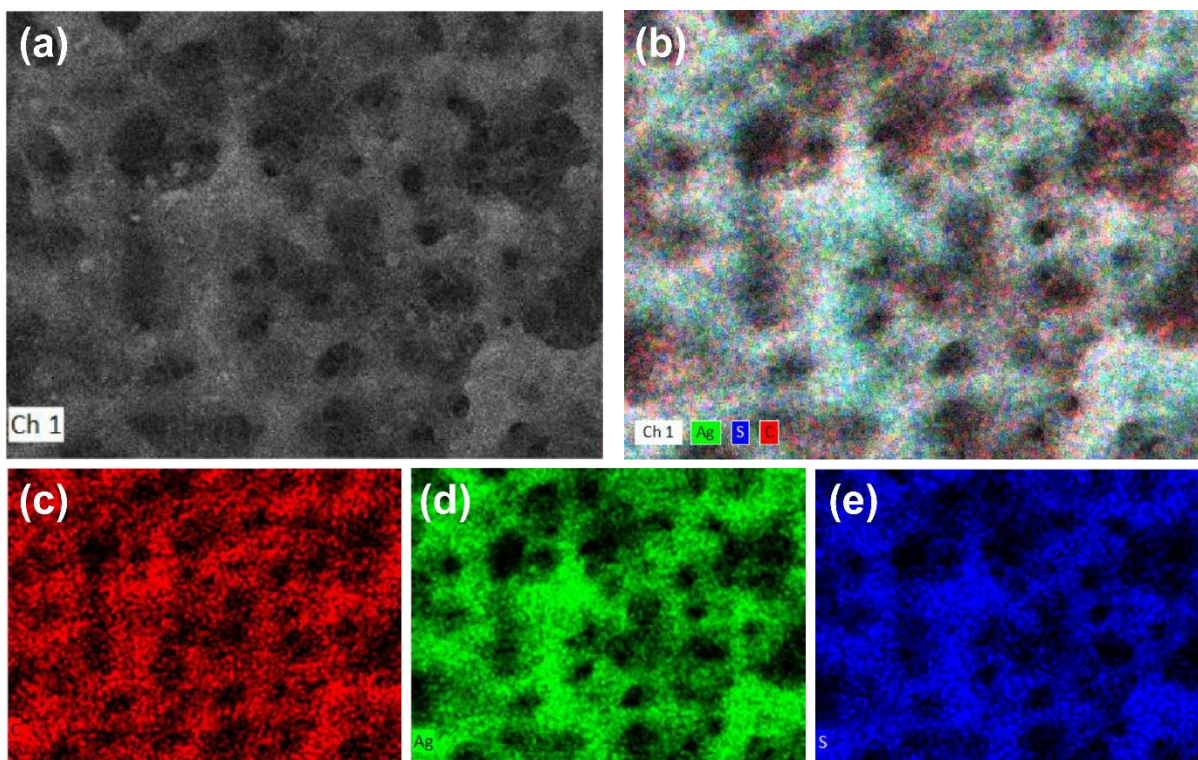


Figure S3. (a) EDS mapping SEM image of the CNT-ANs film. (b) EDS layered image, and element mapping image as (c) Carbon, (d) Silver, (e) Sulfur.

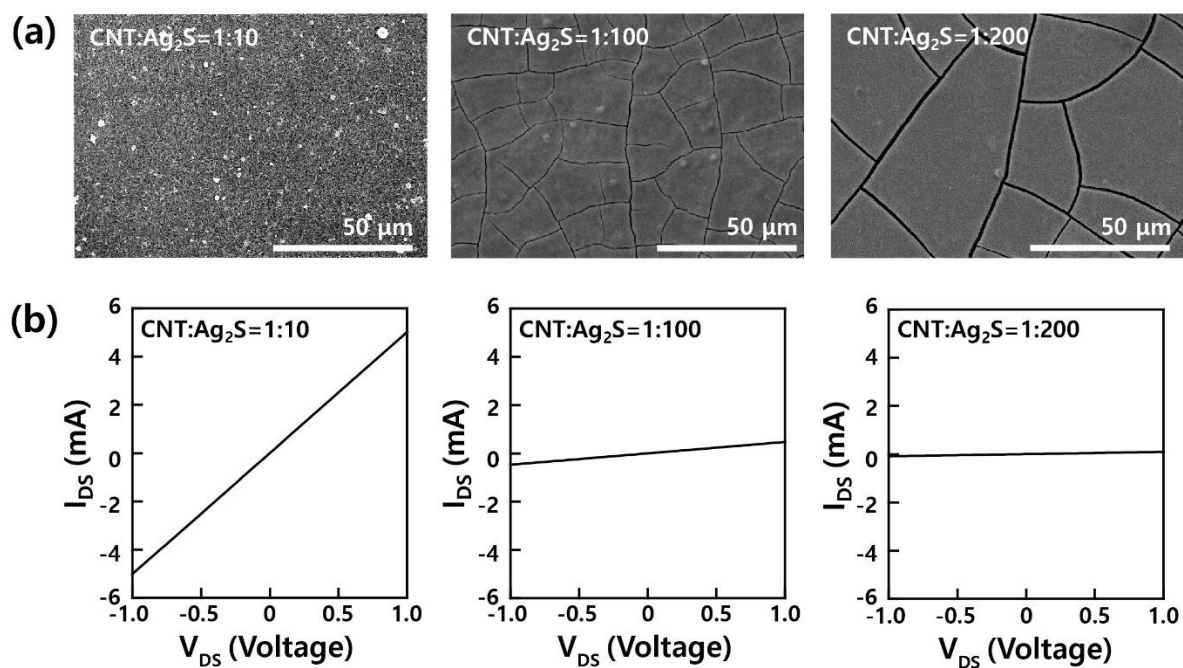


Figure S4. Crack effect in the CNT-AN films. (a) SEM image of CNT-AN samples (1:10, 1:100, 1:200 (CNT:Ag₂S)). Scale bar: 50 μ m. (b) I-V curve of CNT-ANs photodetector devices.

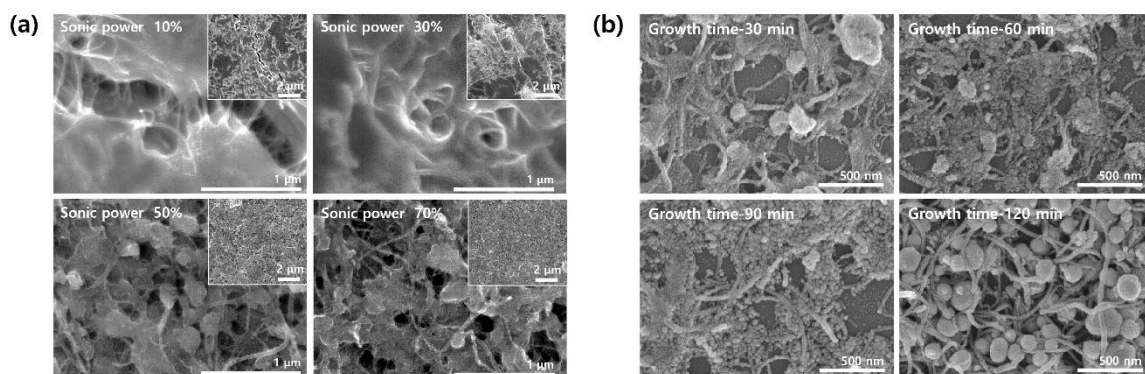


Figure S5. (a) CNT-Ag₂S 1:10 surface morphology according to synthesis power. Scale bar: 1 μm. Inset scale bar: 2 μm. (b) CNT-Ag₂S 1:10 surface morphology according to synthesis time. Scale bar: 500 nm. Inset scale bar: 500 nm.

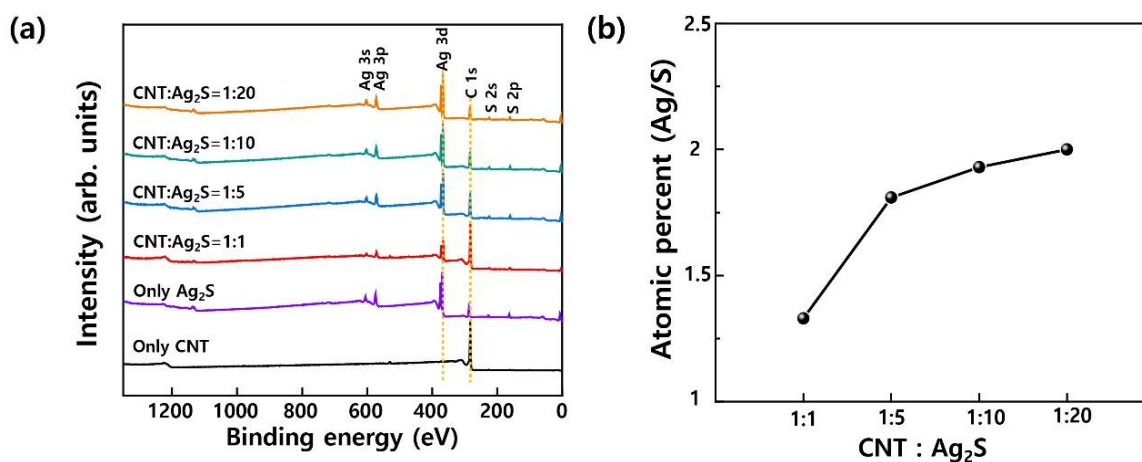


Figure S6. (a) XPS profiles of CNT-ANs, Ag₂S, CNT. (b) Atomic percent (Ag/S) of CNT-ANs mixture.

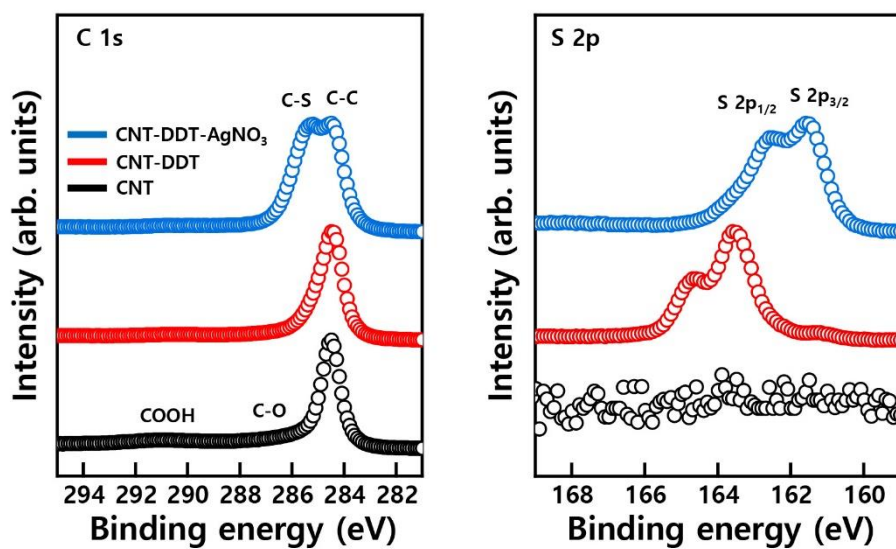


Figure S7. XPS C 1s and S 2p profiles of CNT, CNT-DDT, and CNT-DDT-AgNO₃.

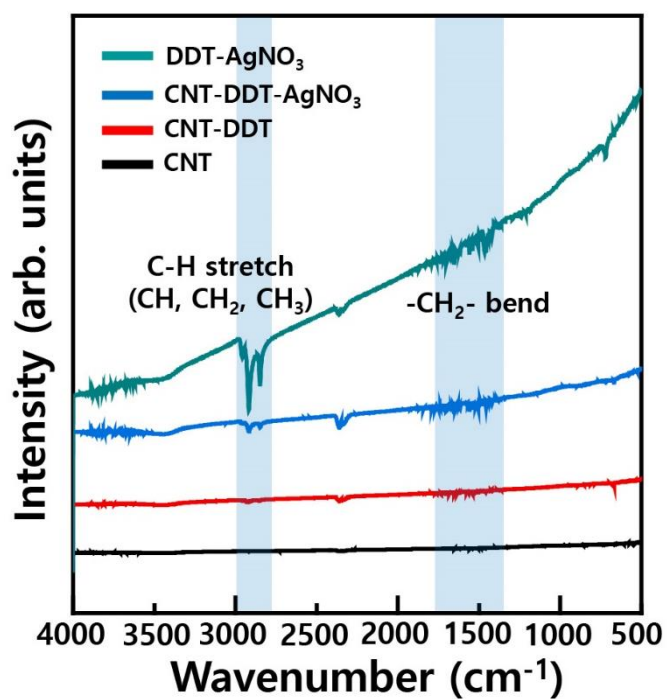


Figure S8. FTIR spectra of CNT, CNT-DDT, and CNT-DDT-AgNO₃.

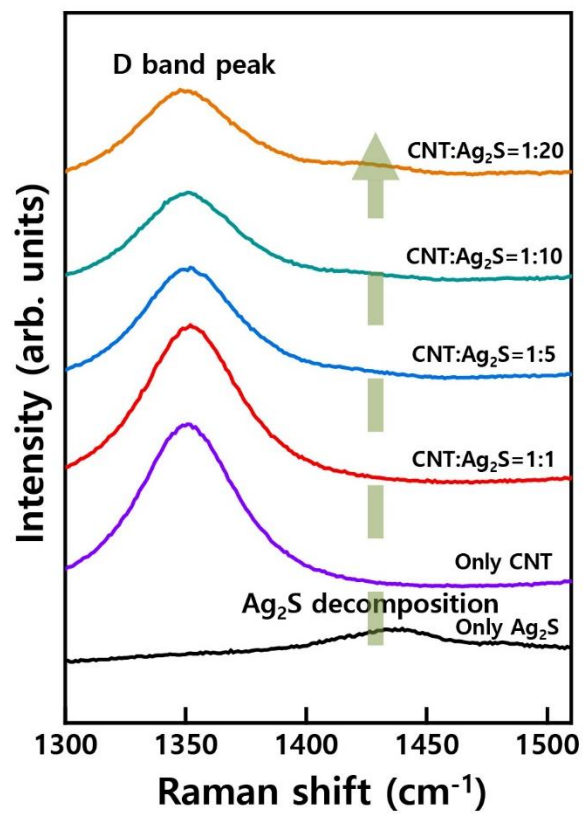


Figure S9. Raman spectra of decomposition of Ag₂S NPs.

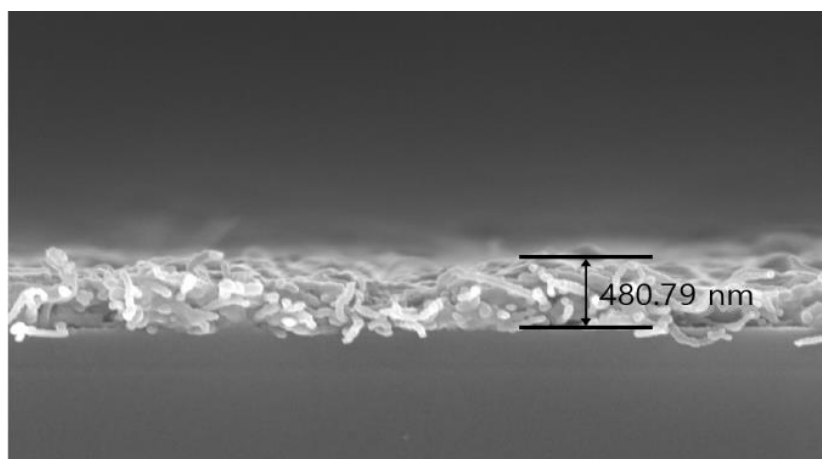


Figure S10. Cross-sectional SEM image of CNT-ANs film.

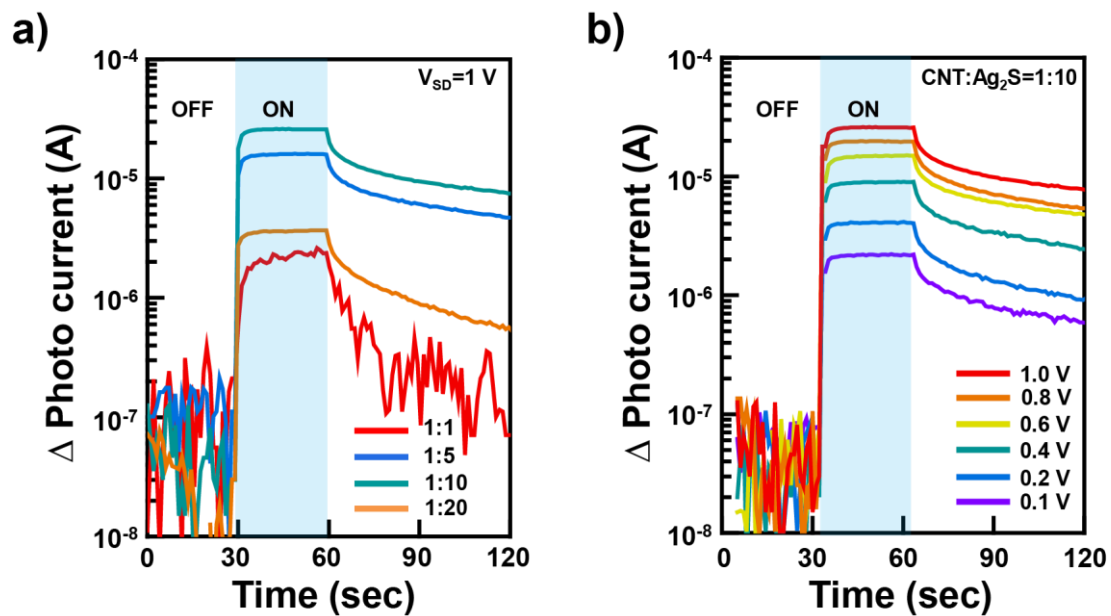


Figure S11. Log scale photocurrent of CNT-ANs photodetectors according to voltage.

Table S1. Time response by repeat cycle light exposure of CNT-ANs at white light, and at 800, 550, and 350 nm.

	White light	800 nm	550 nm	350 nm
Response time (s)	1.18	2.18	1.60	3.69
Decay time (s)	15.16	18.79	17.90	20.55