

# Electronic Supplementary Information

## **AuAg@CdS double-walled nanotubes: Synthesis and nonlinear absorption properties**

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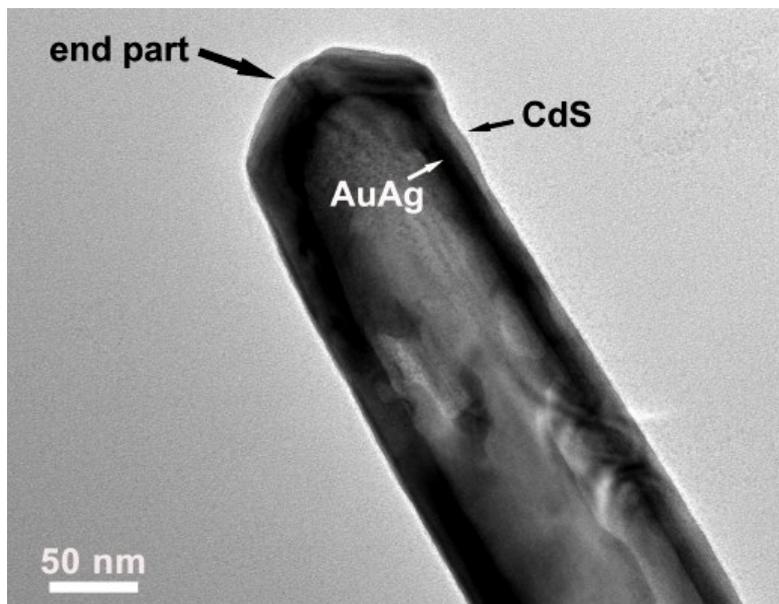
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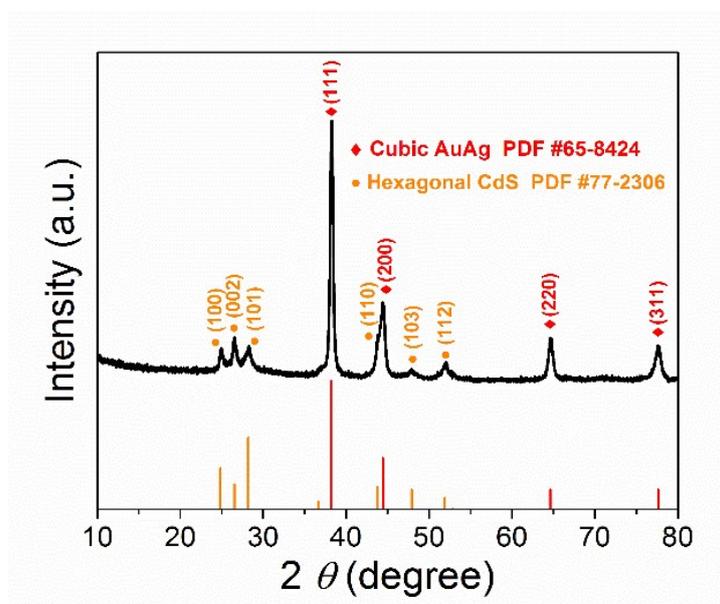
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Shundong Guan, et al., *Nanoscale*, Figure S1

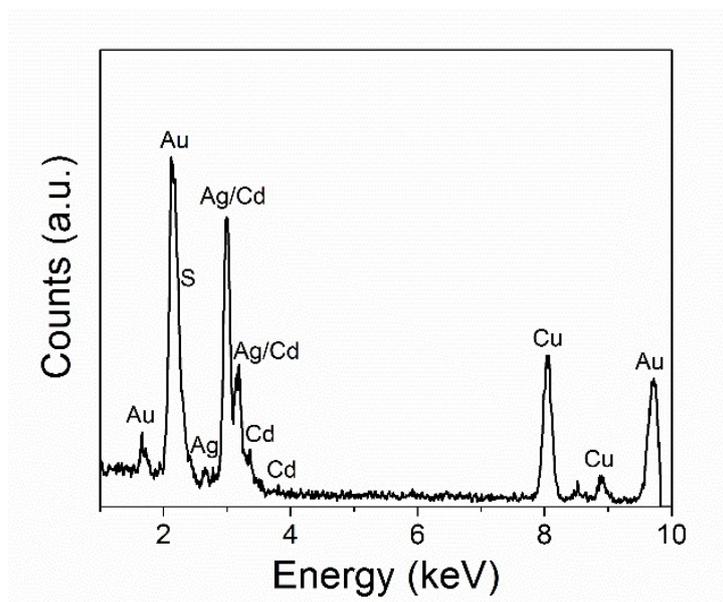


**Fig. S1** Bright-field TEM image taken at the end part of an individual AuAg@CdS DWNT. The result indicates that the end parts of AuAg@CdS DWNTs are closed.

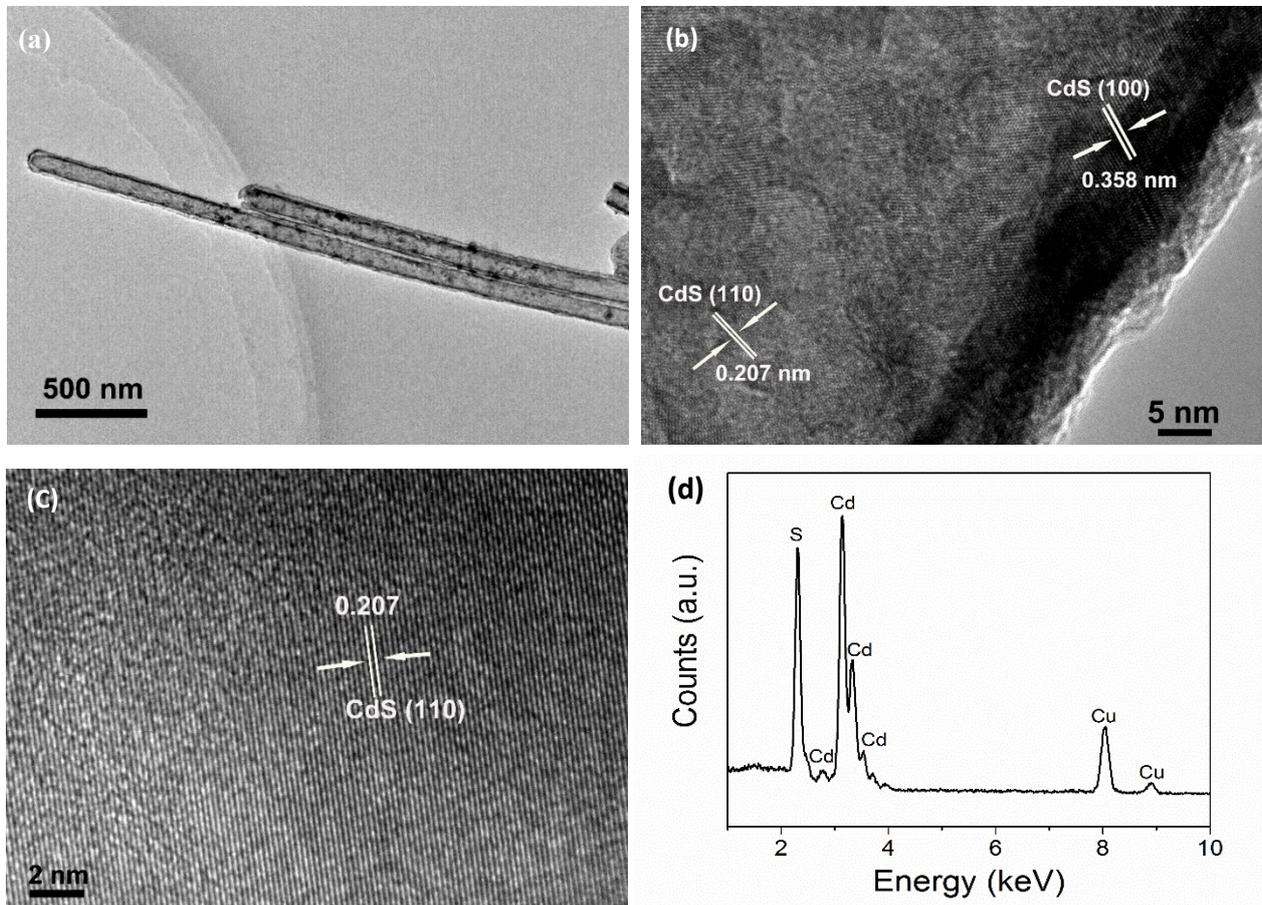
Shundong Guan, et al., *Nanoscale*, Figure S2



**Fig. S2** XRD pattern of AuAg@CdS DWNTs. The result indicates that the products consist of face-centered cubic (fcc) AuAg alloy and hexagonal CdS without any other components.



**Fig. S3** EDX spectrum of an individual AuAg@CdS DWNT. This result indicates the presence of Au, Ag, Cd, and S elements in the DWNTs.



**Fig. S4** TEM results on the CdS NTs after de-alloying of AuAg@CdS DWNTs. (a) Typical bright-field TEM image of CdS NTs. (b) and (c) HRTEM image taken from the edge and central regions of individual CdS NT, respectively. (d) Typical EDX spectrum of an individual CdS NT. The results indicate that the obtained CdS NTs have well maintained hollow tube-like structure like AuAg@CdS DWNTs, but have no remaining Au and Ag elements in them.