

Supporting Information *for the article:*

Bending and Shell Formation of Tellurium Nanowires Induced by Thiols

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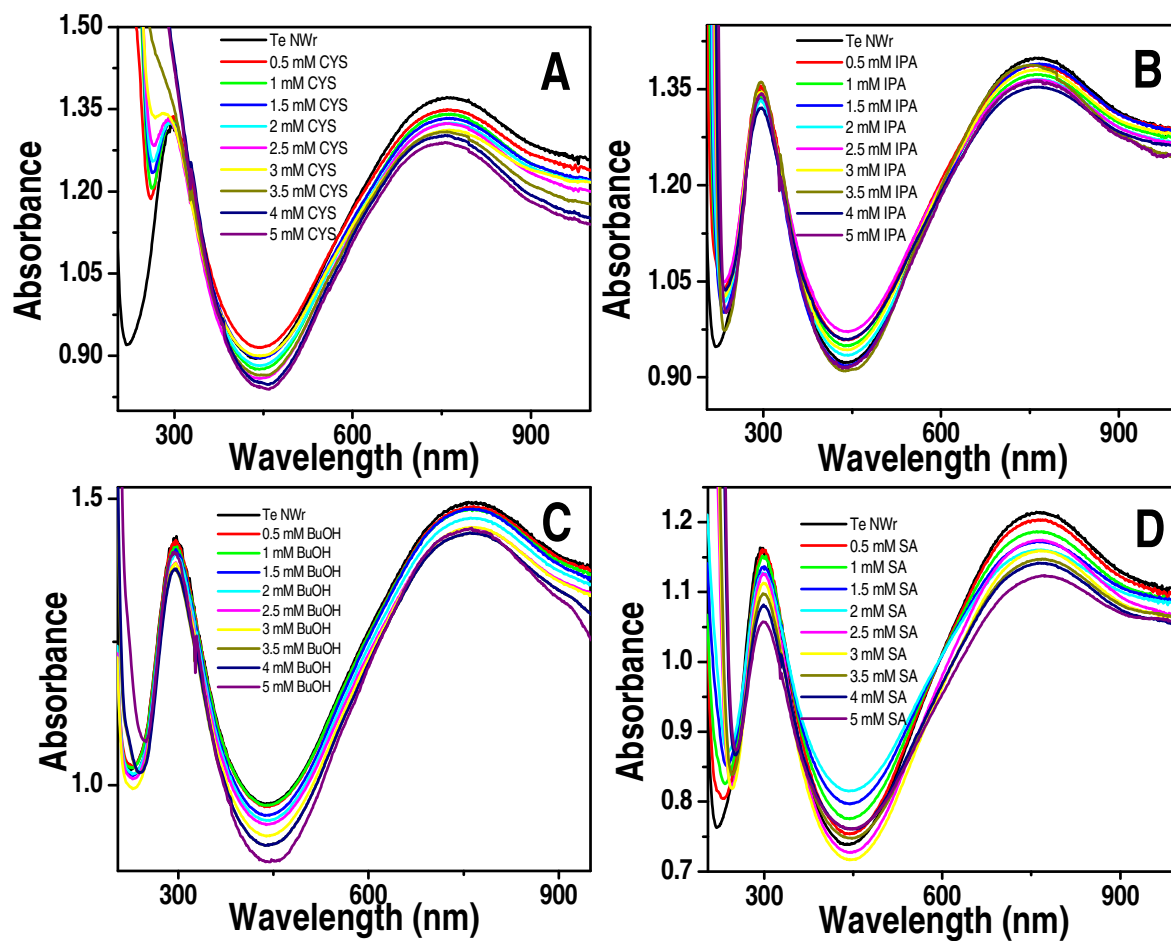


Figure S1. UV/vis spectral changes of Te NW after the addition of different concentrations of A) cystiene, B) IPA, C) butanol and D) SA.

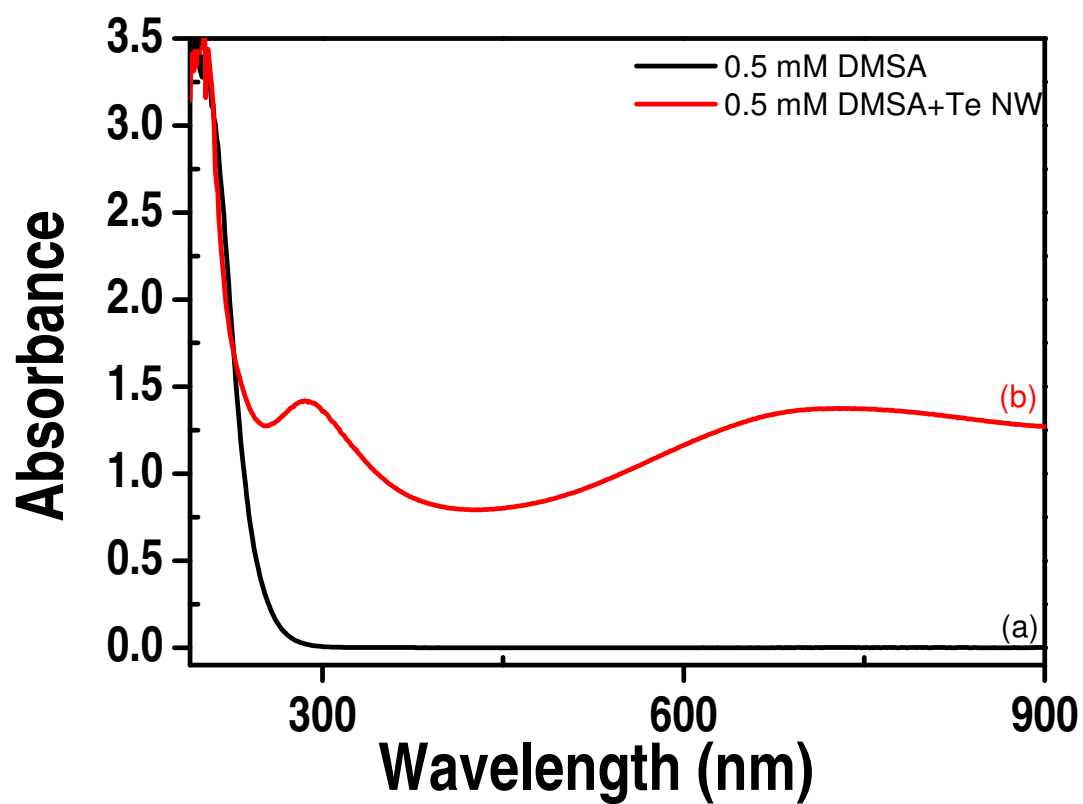


Figure S2. UV/Vis spectra of (a) 0.05 mM DMSA and (b) Te NW sample containing 0.05 mM DMSA showing that there is a clear difference in the spectra.

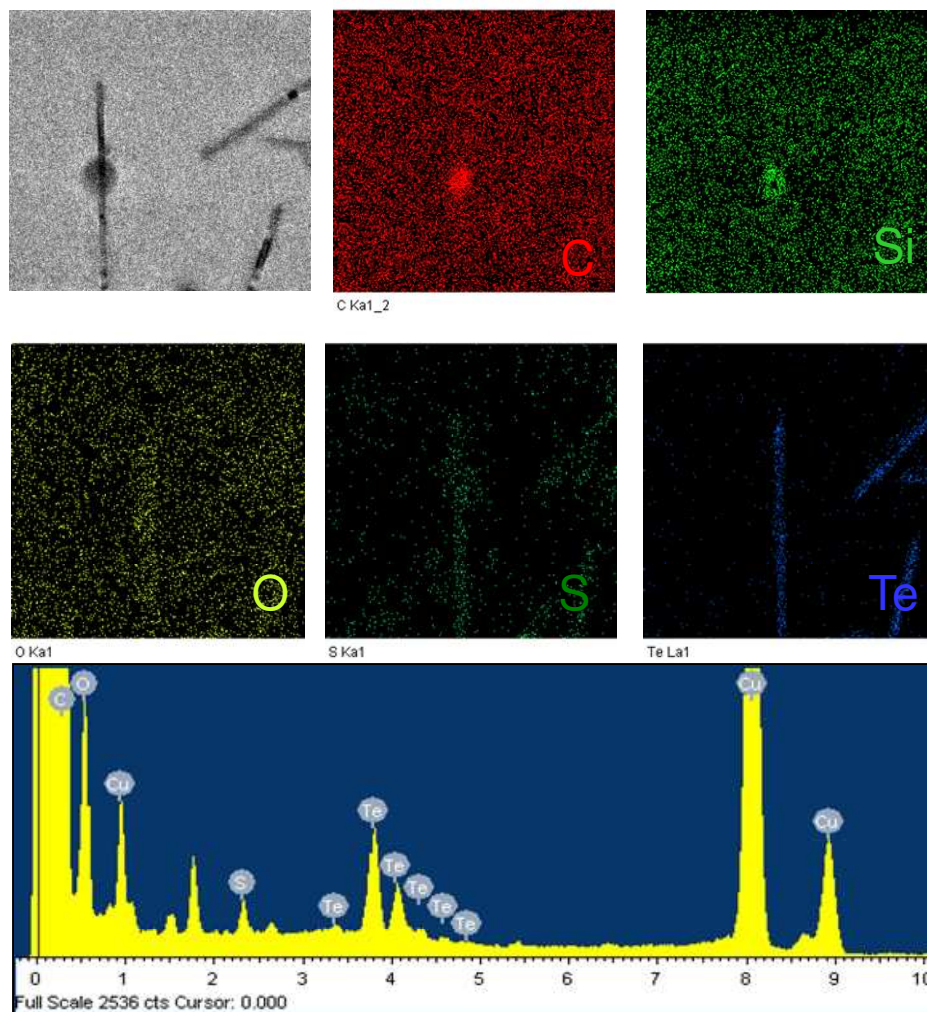


Figure S3. EDS spectrum and elemental maps of the pristine Te NW sample after one centrifugation-redispersion cycle (Te_1). The elemental maps are moved slightly to the left in comparison to the bring field image.

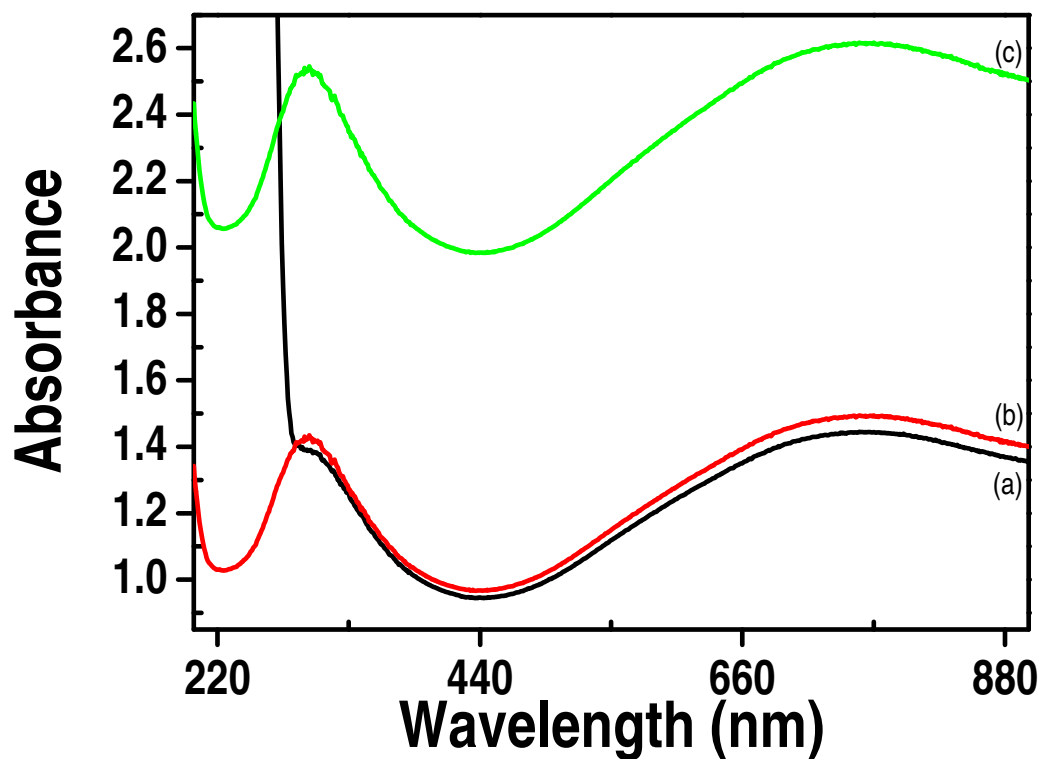


Figure S4. UV/Vis spectral changes of Te NW sample upon centrifugation redispersion cycles. (a) As-prepared Te NW without centrifugation, (b) and (c) after 1 and 4 rounds of centrifugation redispersion cycles. We can see that peak I is smeared in the as-prepared sample.

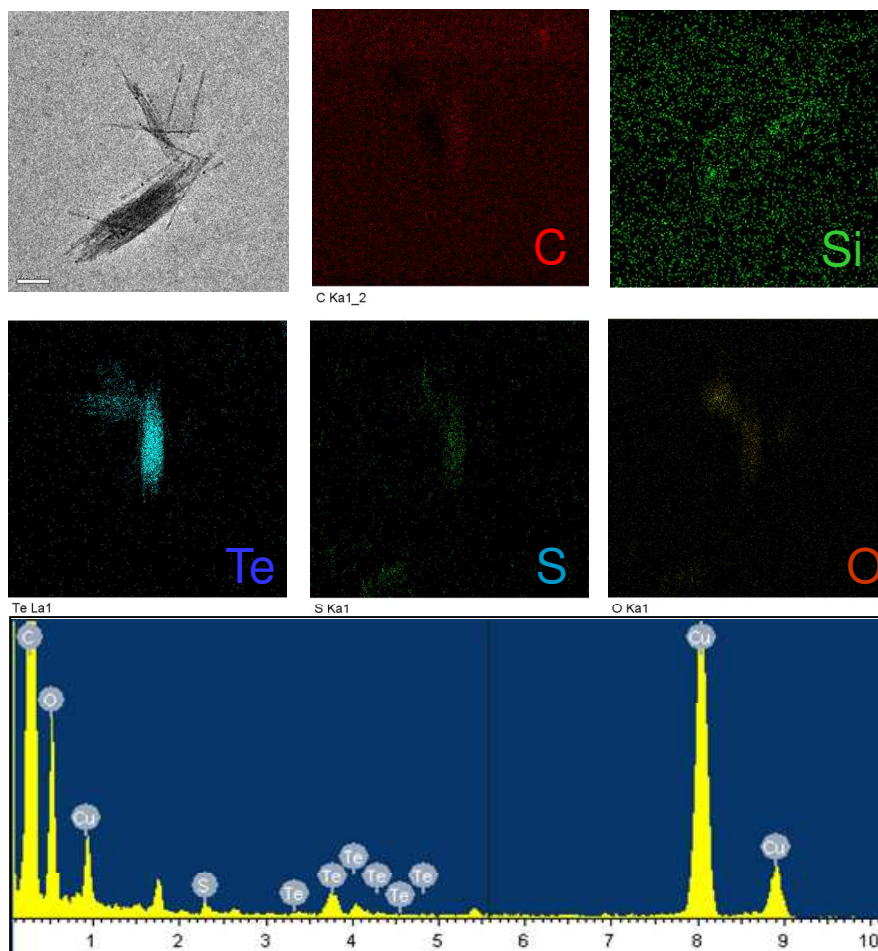


Figure S5. EDS spectrum and elemental maps of the pristine Te NW sample after four rounds centrifugation-redispersion cycles (Te_2). The elemental maps are moved slightly in comparison to the bright field image.

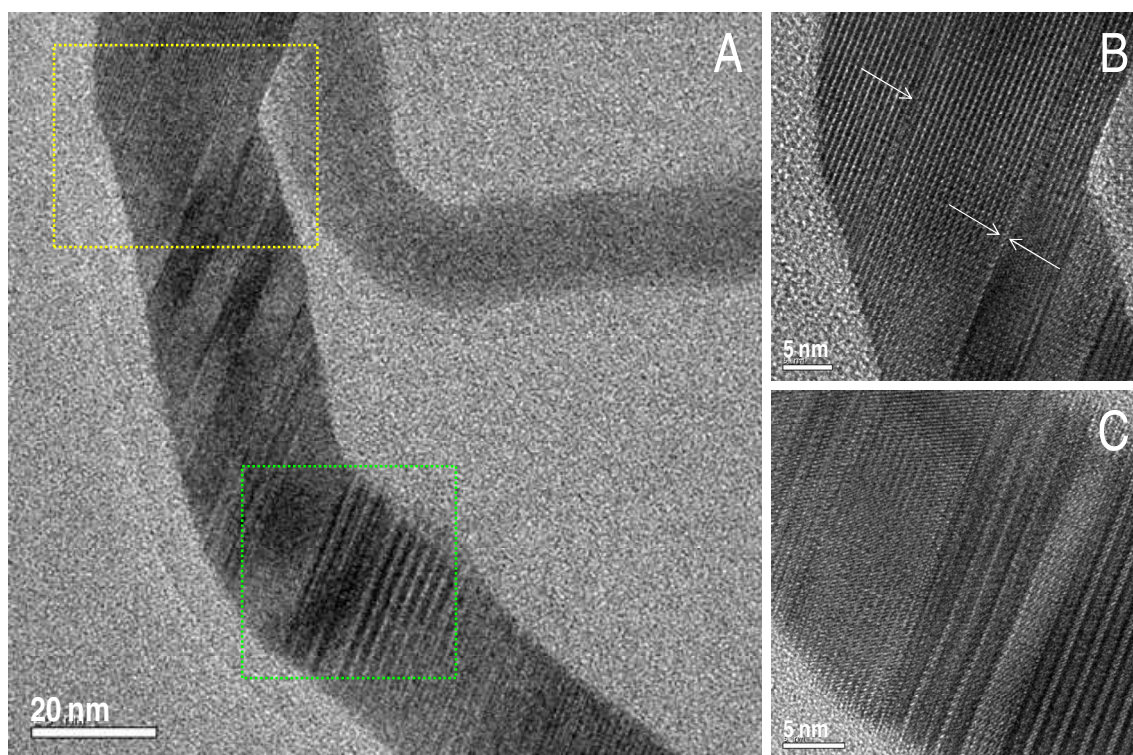


Figure S6. A) HRTEM image showing the defects over a large region of a single bent Te NW. B) Lattice resolved TEM image of the portion marked by yellow rectangle in B. We can clearly see a row of atoms missing near the bend, denoted by arrows. C) Lattice resolved TEM image of the portion marked by green rectangle in B, clearly showing a large number of defects.

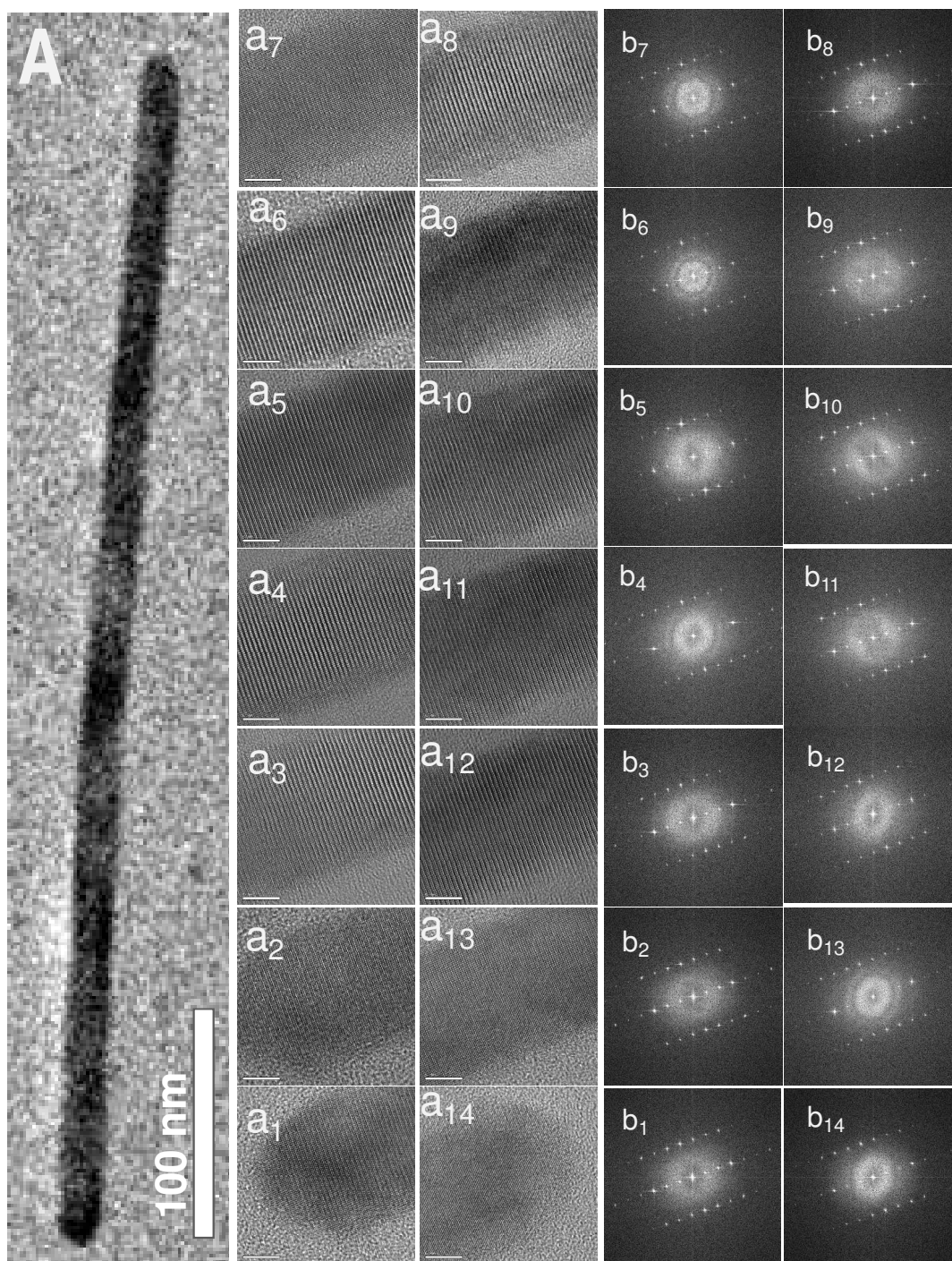


Figure S7. HRTEM image of a single pristine Te NW. a_1 to a_{14}) Consecutive lattice resolved HRTEM images taken along the length of the NW, starting from the tip, showing a defect-free surface throughout the NW. Scale bar in each image 5 nm. b_1 to b_{14}) Consecutive corresponding FFTs generated from the HRTEM images given in Figure a_1 to a_{14} emphasizing a defect free surface although the NW.

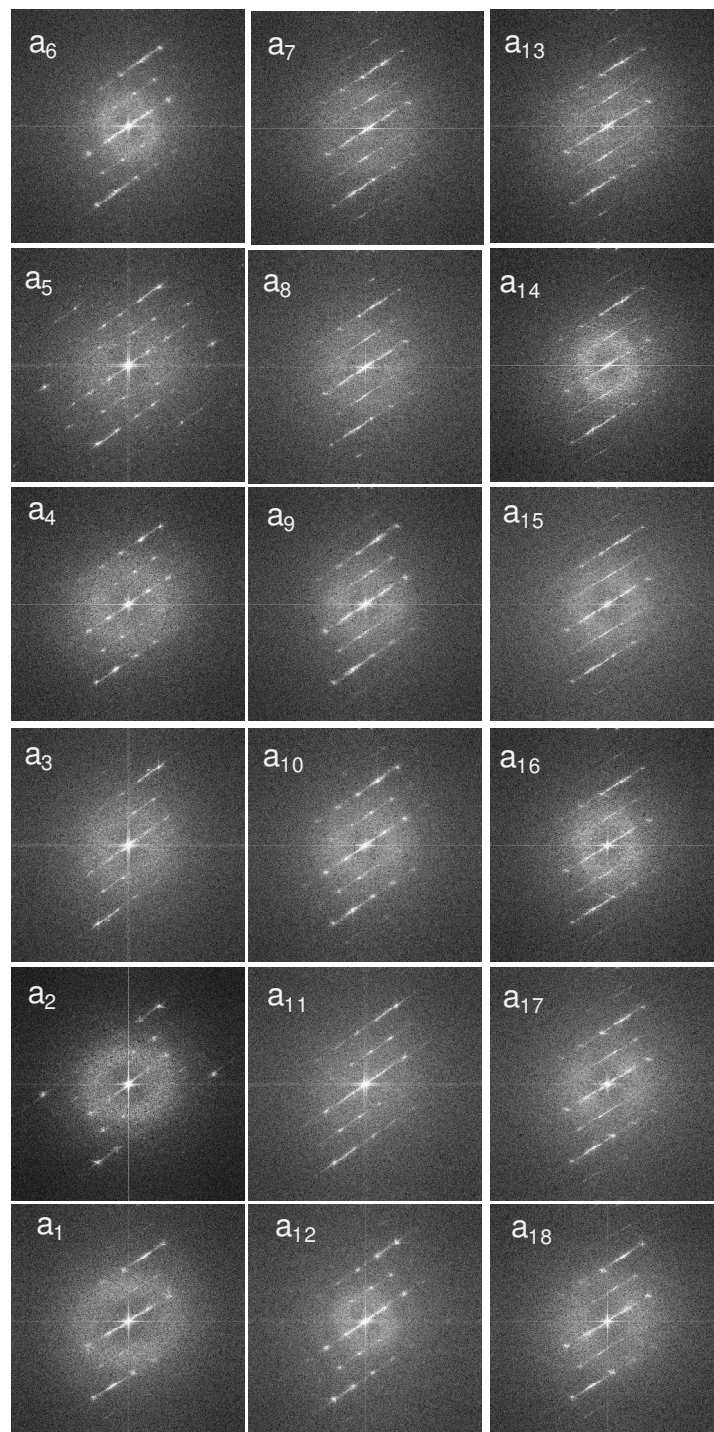


Figure S8. a_1 to a_{18}) Consecutive corresponding FFTs generated from the HRTEM images given in Figure 11 a_1 to a_{18} in main manuscript showing the defects around the bend.

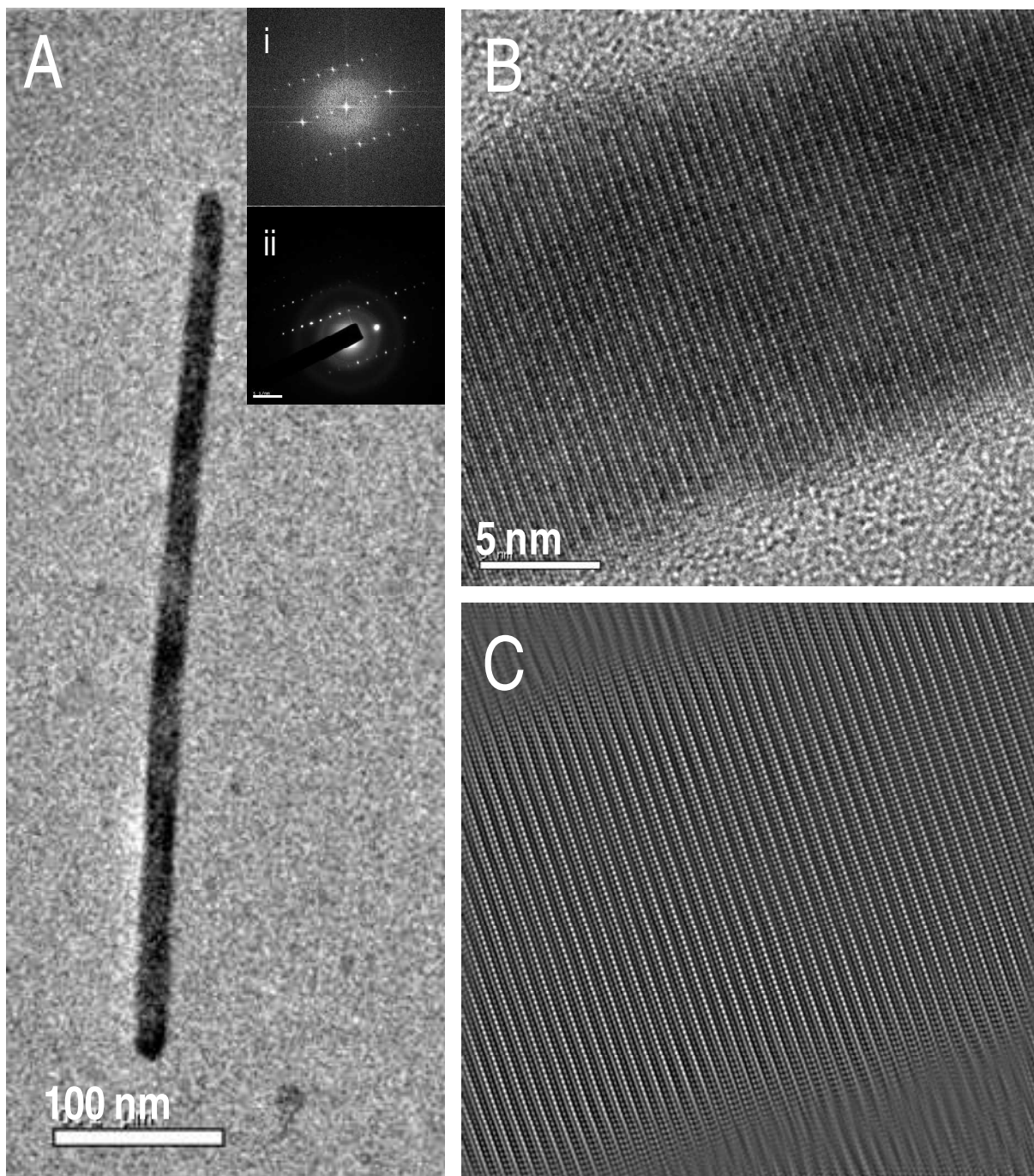


Figure S9. A) TEM micrograph of a single Te NW B) Lattice resolved image and C) IFFT image from a portion of Te NW showing the perfect single crystalline nature. Inset i and ii FFT and SAED pattern from the same area showing the single crystalline nature.

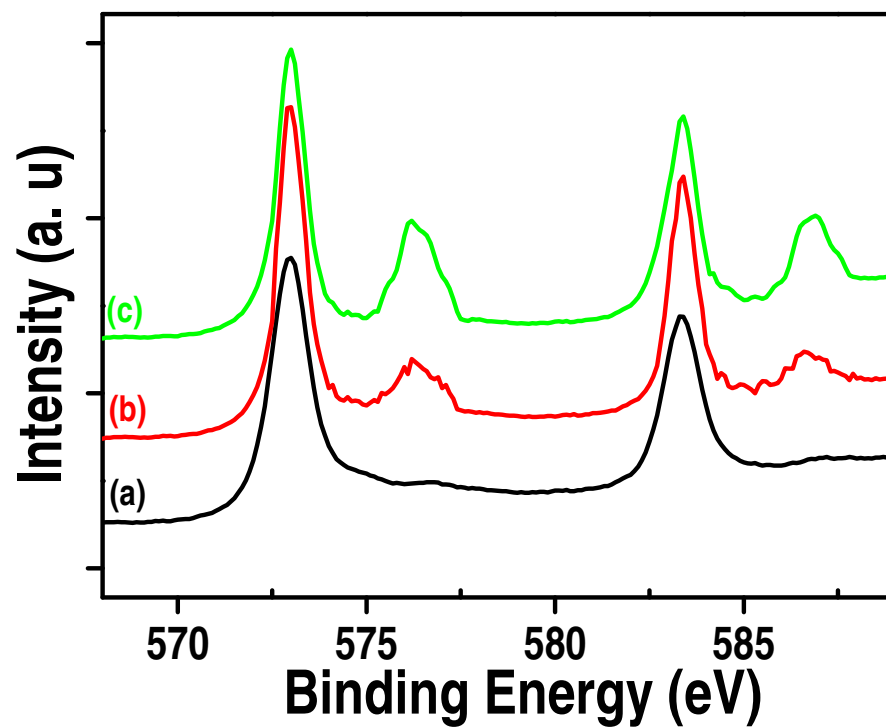
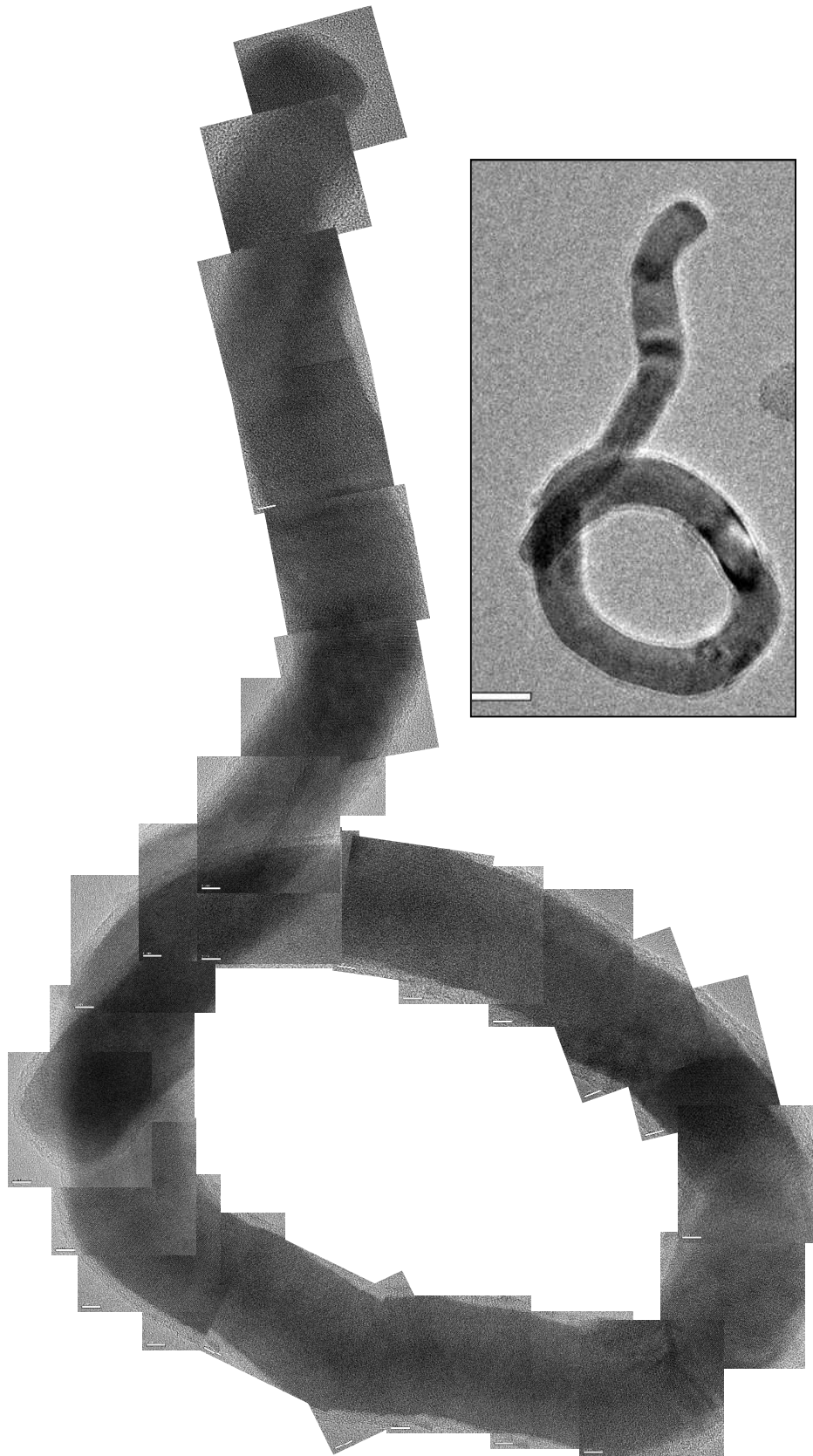


Figure S10. XPS spectra in the Te 3d region for (a) as-prepared Te NW, (b) Te₁ and (c) Te₂.



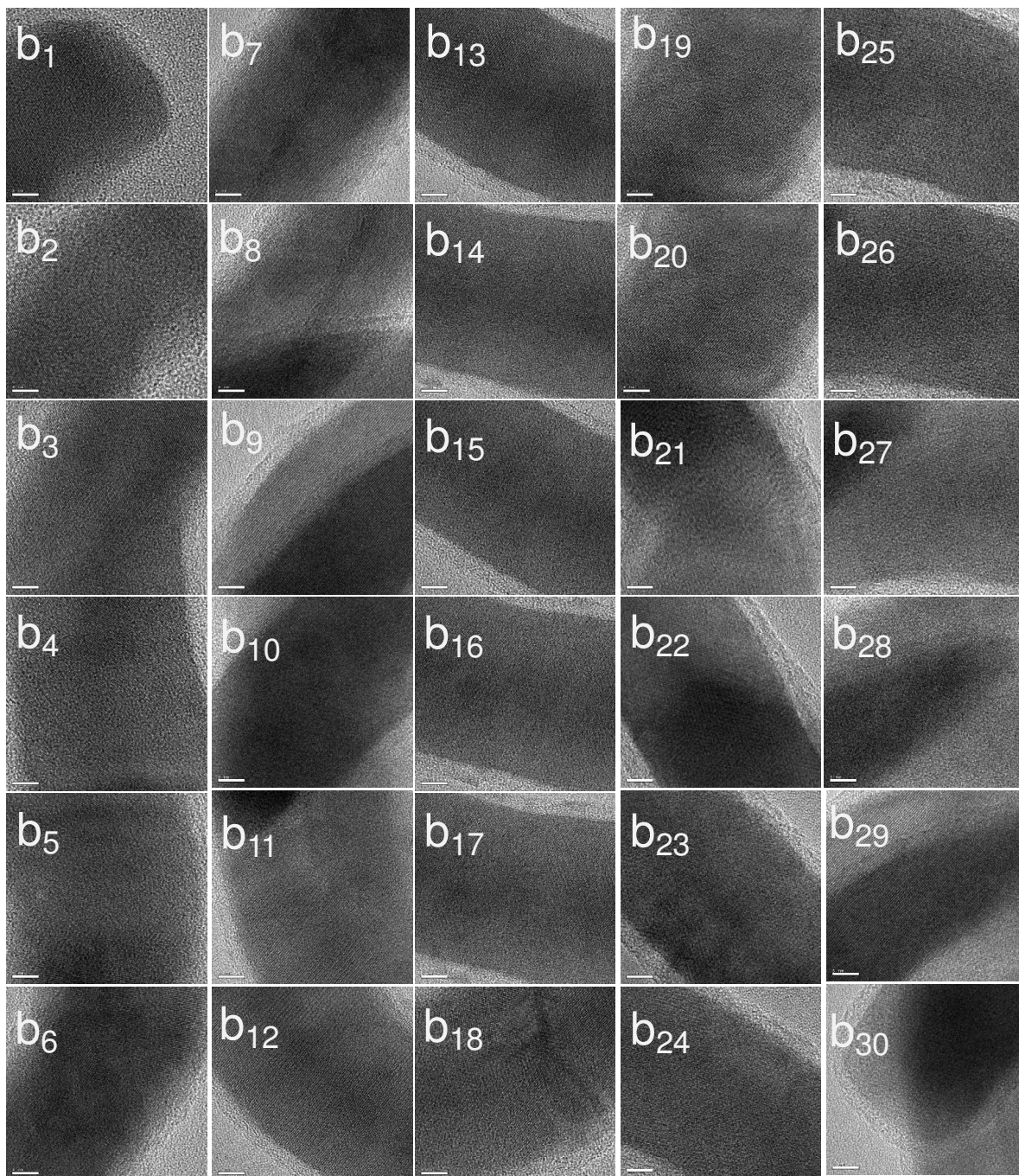


Figure S11. HRTEM image of a bent nanowire and reconstructed image of a bent nanowire from consecutive lattice resolved images taken from one end to the other end along the length of nanowire. b₁-b₃₀) consecutive lattice resolved images taken from one end to the other end along the length of same nanowire. Scale bar in each lattice resolved image is 5 nm.