Electronic Supporting Information

Rapid, facile synthesis of InSb twinning superlattice nanowires with high-frequency photoconductivity response

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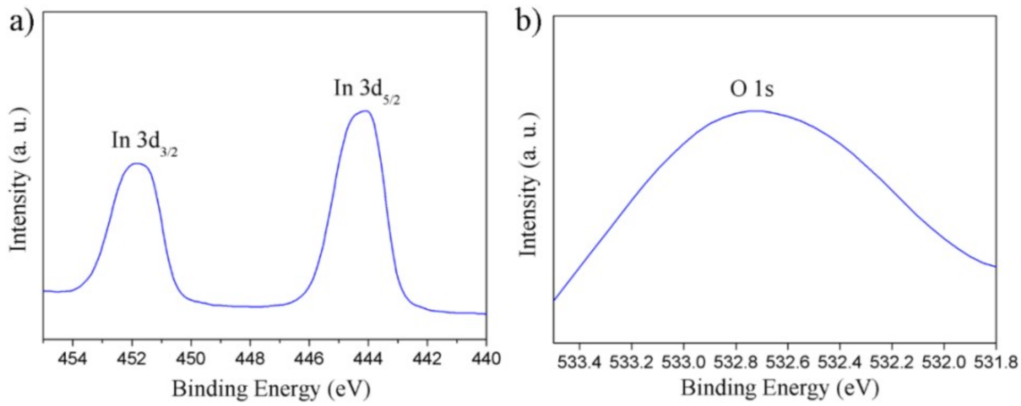

Figure S1. XPS spectra of the as-synthesized InSb nanowires. a) The In 3d core-level spectrum. b) The O 1s spectrum of the as-synthesized InSb nanowires.

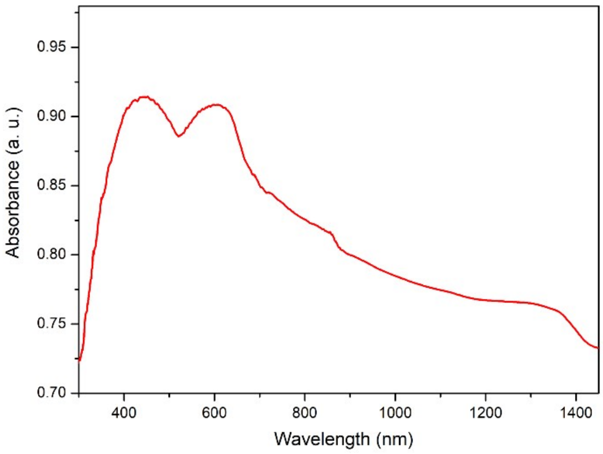

Figure S2. The room temperature UV−vis−NIR absorption spectra spectra of InSb twinning superlattice nanowires.

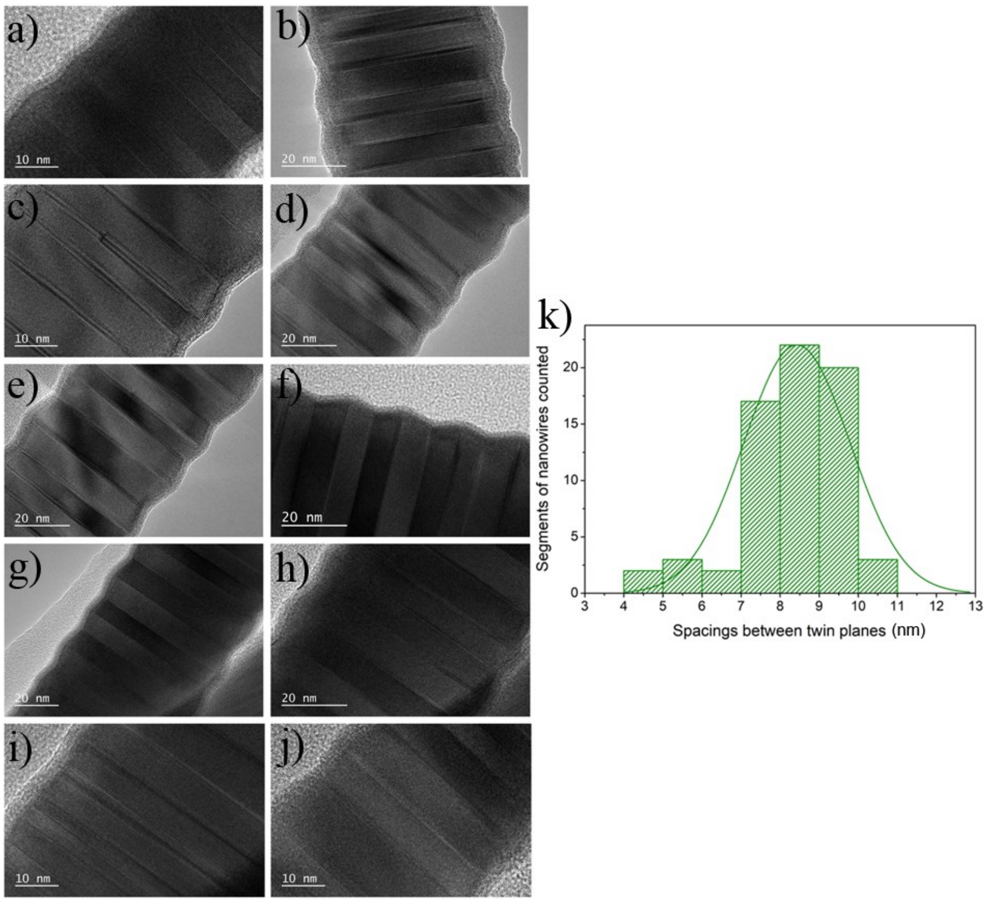

Figure S3. (a-j) TEM images for the as-prepared InSb twinning superlattice nanowires, and (k) the spacings between two consecutive twin planes for the InSb nanowires data are indicated in the histogram. The solid line shows a Gaussian fit of the spacings between twin planes distribution.

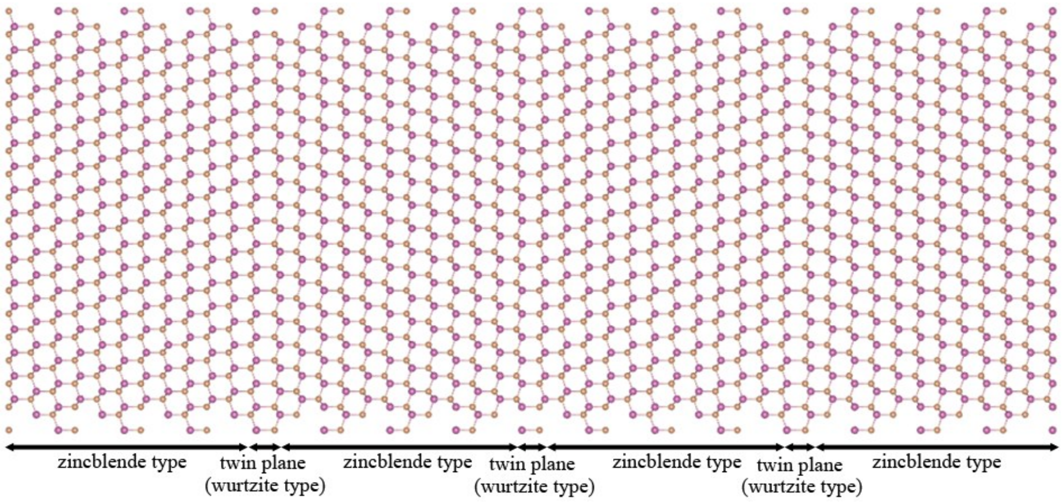

Figure S4. Atomic model for the periodic growth of the InSb nanowire with twinning superlattices, the purple and orange balls represent antimony and indium atoms.

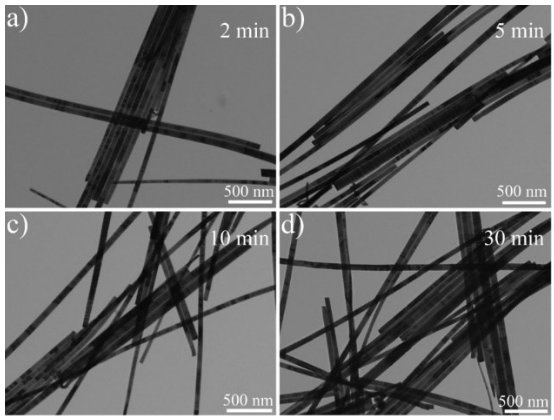

Figure S5. TEM images of InSb NWs with reaction times of 2 min, 5 min, 10 min, 30 min detected at room temperatures were shown.

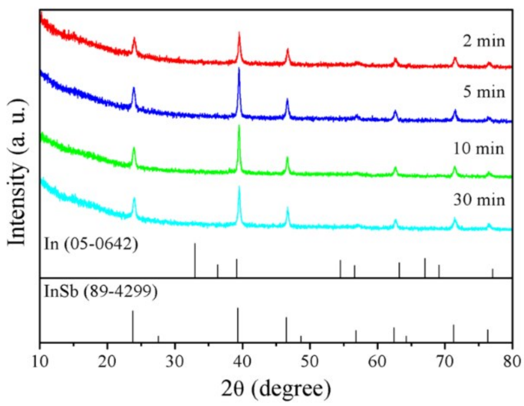

Figure S6. XRD patterns of the as-synthesized InSb nanowires with reaction times of 2 min, 5 min, 10 min, 30 min.

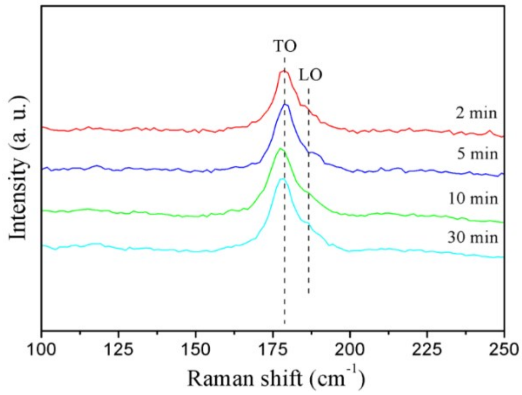

Figure S7. Raman spectra of the as-synthesized InSb nanowires with reaction times of 2 min, 5 min, 10 min, 30 min detected at room temperature detected at room temperatures were shown.

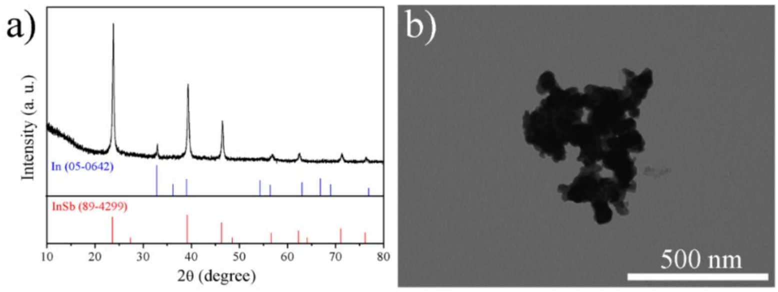

Figure S8. (a) XRD pattern, and (b) TEM image for the InSb nanocrystals prepared at about 175 °C for 60 s at the absence of TOP.

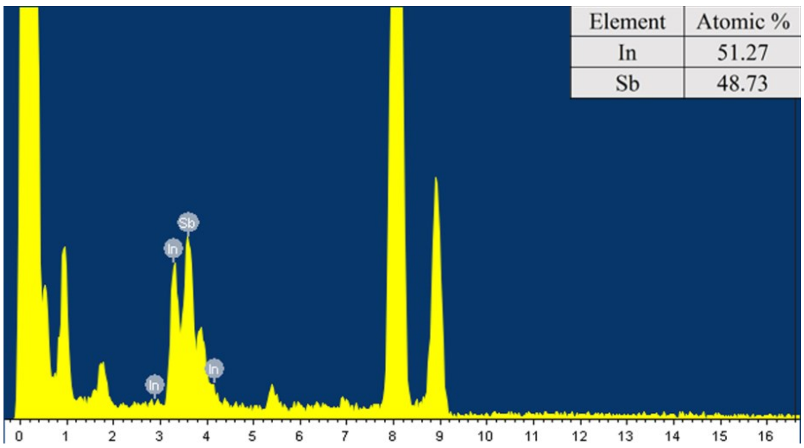

Figure S9. STEM-EDX spectra of a typical InSb nanowire stem. The signal of Cu and C arises from the TEM grid made of Cu.

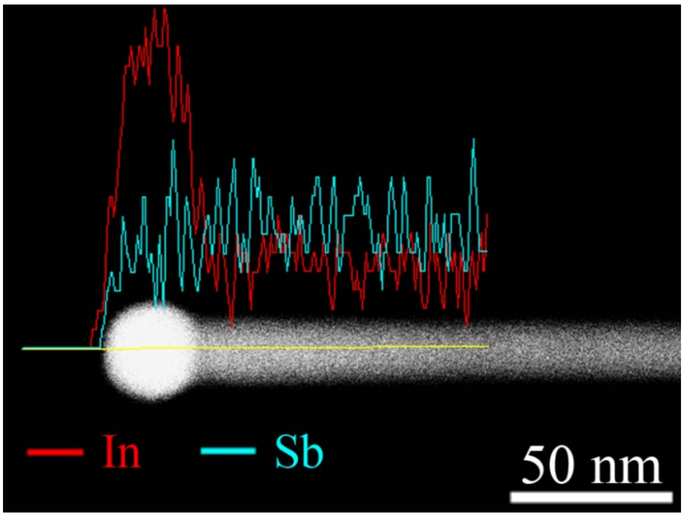

Figure S10. STEM-EDX line scan of a single InSb nanowire from the In tip. Red and light blue lines represent In and Sb elements, respectively.

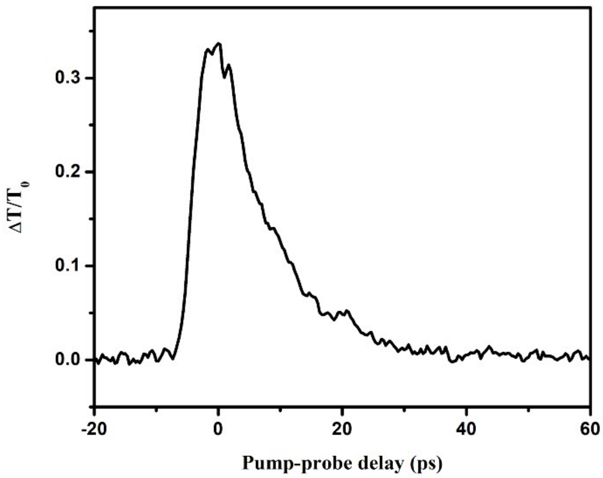

Figure S11. Pump-induced change in peak transmitted terahertz electric field (*$\Delta T/T_0$*) for different pump-probe delays for InSb nanowires excited at 800 nm with an incident pump fluence of 50 mJ/cm^2.