

Supporting information for:

Self-assembled nanodisks in coaxial GaAs/GaAsBi/GaAs core-multishell nanowires

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1. Fabrication process of the samples for radial and axial cross-sectional STEM investigations.

Fig. S1 show the fabrication process of the samples for radial and axial cross-sectional scanning transmission electron microscopy (STEM) and energy disperse spectroscopy (EDS) investigations. The procedure is identical from step 1 to step 3. We first select an area with a high nanowire (NW) density (step 1). At step 2, carbon is deposited within this area to bury the NWs for their support. After the carbon deposition, the buried NWs were etched to lift-off from the original substrate – step 3. The species were then picked up and attached to a focused ion beam (FIB) grid (step 4) for further thinning to the thickness of about 100 nm (step 5), as required for the STEM investigations. At step 4, the measurement orientations were also selected. The so-fabricated samples utilized for radial and axial cross-sectional STEM measurements are shown schematically in Fig. S2.

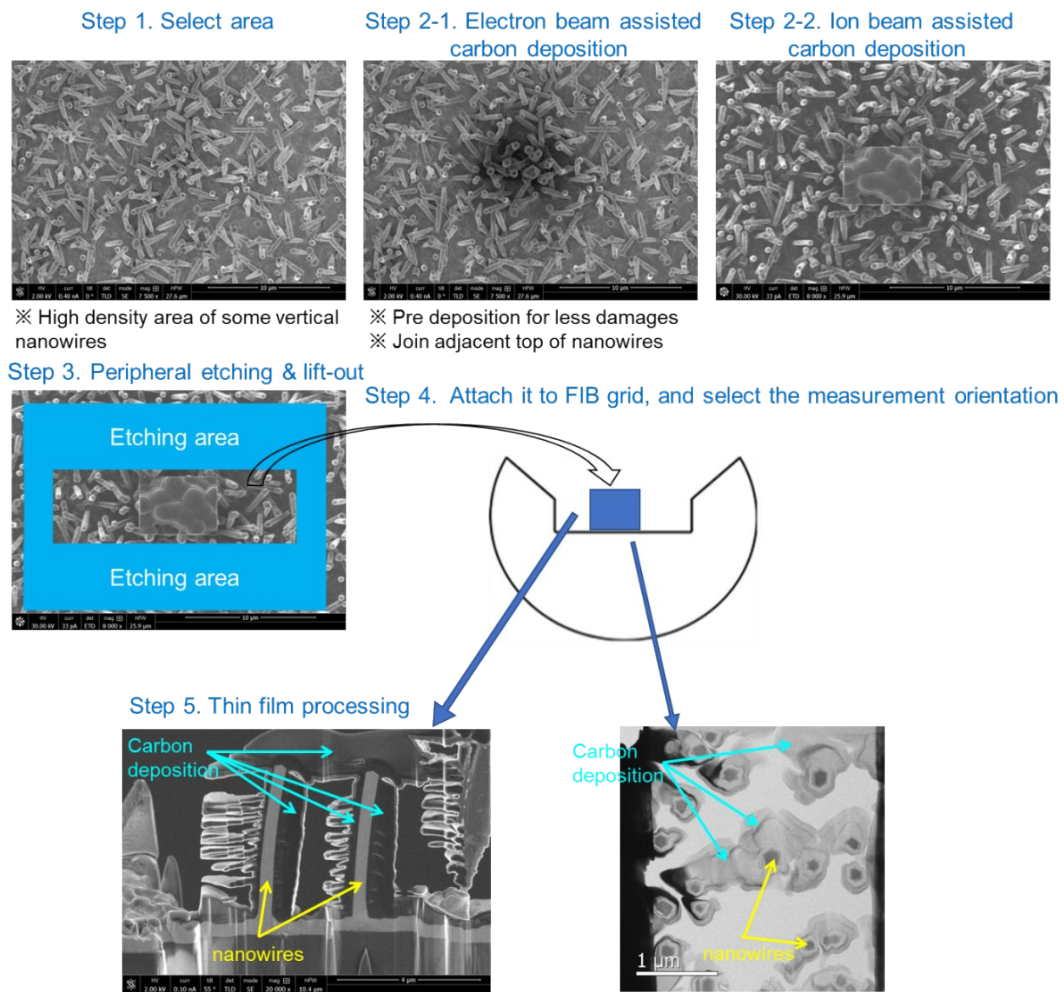


Figure S1. Fabrication process of the samples for STEM/EDS investigations.

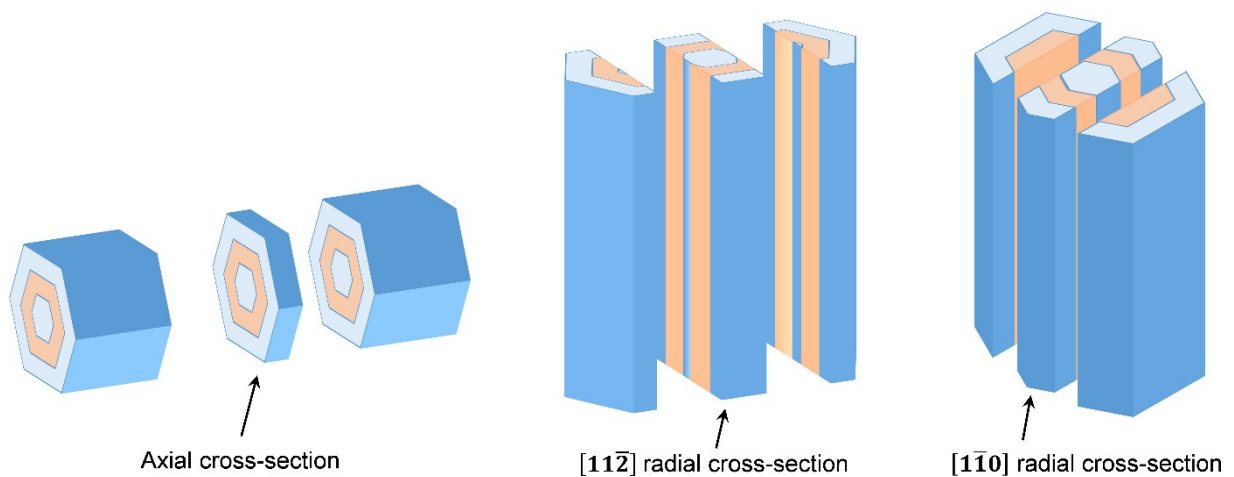


Figure S2. Schematic illustration of the NW slices for cross-sectional STEM and EDS measurements.

2. Additional STEM images of the studied NWs.

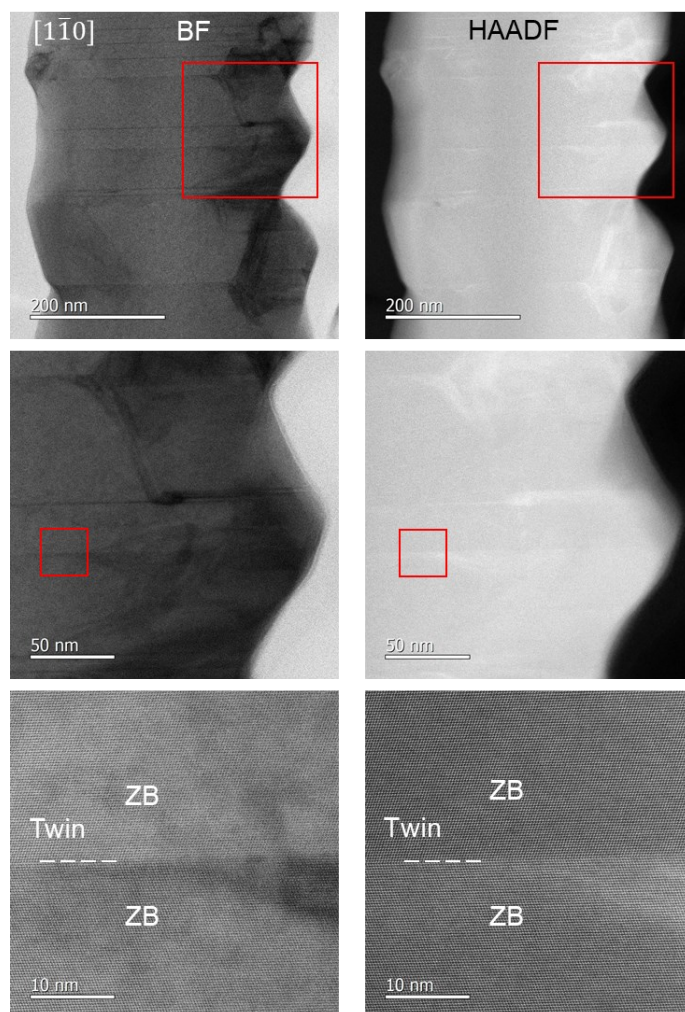


Figure S3. Radial cross-sectional (the left panels) BF-STEM and (the right panels) HAADF-STEM images at various magnifications observed from $[1\bar{1}0]$ direction. The images were taken within selected regions corresponding to Fig. 1(d) in the main manuscript. The Bi-rich nanostructures correspond to the twin planes, as verified by high-resolution STEM images.

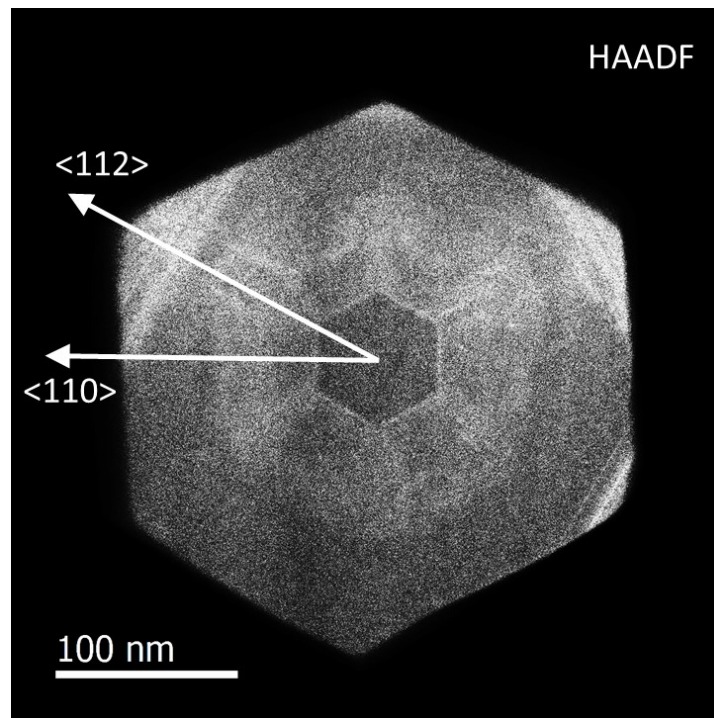


Figure. S4. Axial cross-sectional HAADF image, which clearly shows the core/shell/shell structure of investigated NWs.