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Supporting Information

for

Revealing the local crystallinity of single silicon core–shell nanowires using tip-enhanced Raman spectroscopy

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Additional experimental data

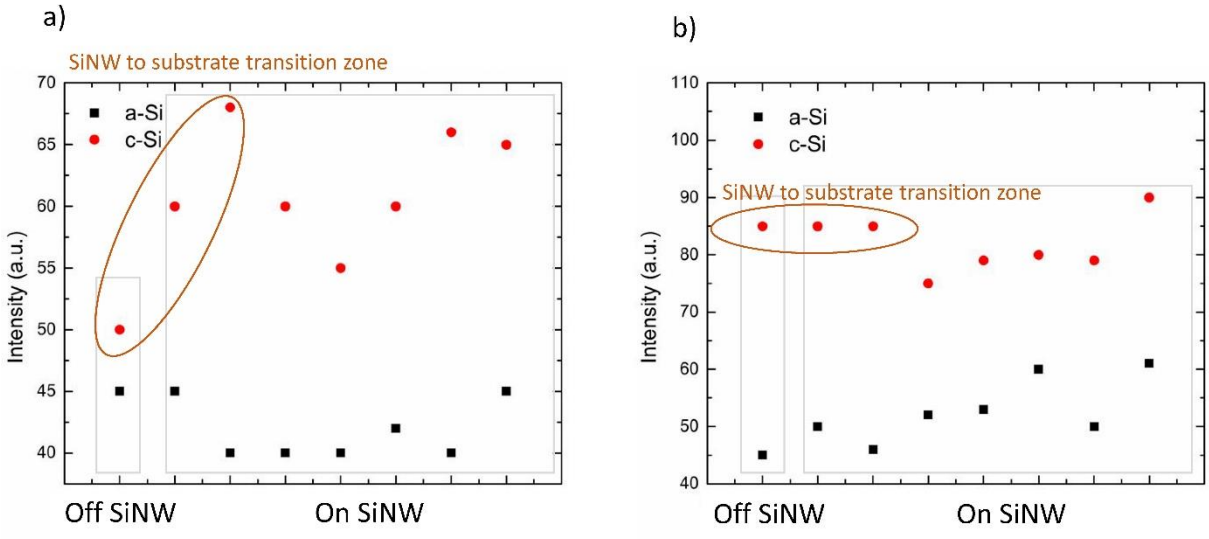

Figure S1: a) and b) are the intensity evolutions of the a-Si and c-Si Raman peaks shown in Figure 5c and Figure 5d, respectively. In the TERS measurements shown in Figure S1a, the a-Si Raman peak intensity stays nearly constant indicating the crystal state of the SiNW shell; while the c-Si intensity varies across the perimeter of the SiNW. In the confocal measurements shown in Figure S1b, the variations in the c-Si intensity, for example at the transition zone, are smaller than those from the TERS measurements due to the limited optical resolution.

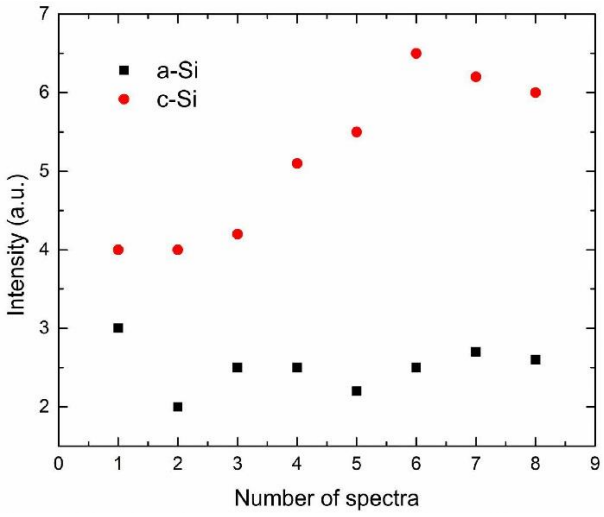

Figure S2: The intensity evolution of the a-Si and c-Si Raman peaks shown in Figure 6b. The 8th data points are derived from the red spectrum in Figure 6b; while the 1st data points are derived from the light blue spectrum. Here, the variation in the local crystallinity can be seen from the evolution in the c-Si Raman intensity.