

Supporting information: Linear Heterostructured Ni₂Si/Si Nanowires with Abrupt Interfaces Synthesised in Solution

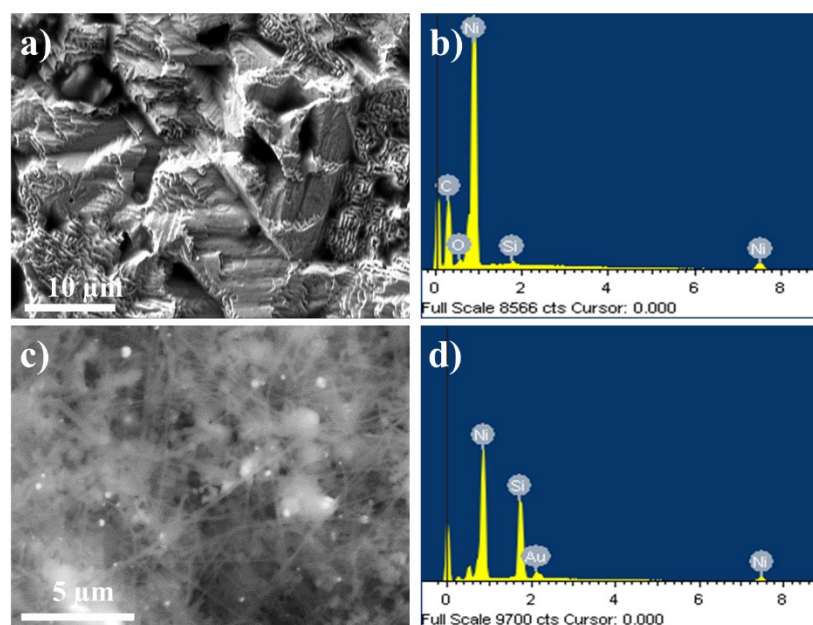


Figure S1: EDS analysis of Ni substrate after reaction without Au layer (a,b) and after NW growth with Au layer (c,d).

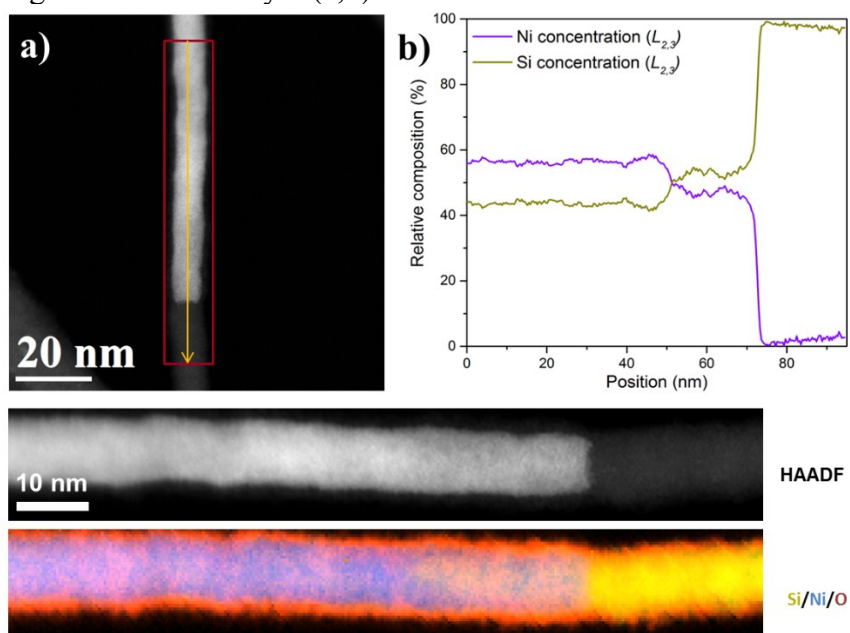


Figure S2 a) HAADF image of heterostructure NW with spectrum region for EELS analysis highlighted. b) Relative composition EELS profile of NW. c) Overlaid EELS maps for O, Si and Ni corresponding to the HAADF image spectrum region.

Figure S2 shows a HAADF-STEM image of another heterostructure NW with a diameter of approximately 10 nm that was characterised using aberration corrected STEM with atomic resolved EELS capabilities. Again, it was seen that there was an intermediate Ni_xSi segment in this NW of approximately 10 nm in length through the use of an EELS analysis in Figure 7b. Interestingly, the relative ratio of Ni to Si in the initial Ni_xSi segment is slightly less in this NW (i.e. $x < 2$). It is known that quantification analysis using EELS has a roughly 10% margin of error, so the initial NW segment is likely be Ni_2Si .⁴² However, the possibility of the initial segment being a different Ni silicide phase cannot be dismissed.

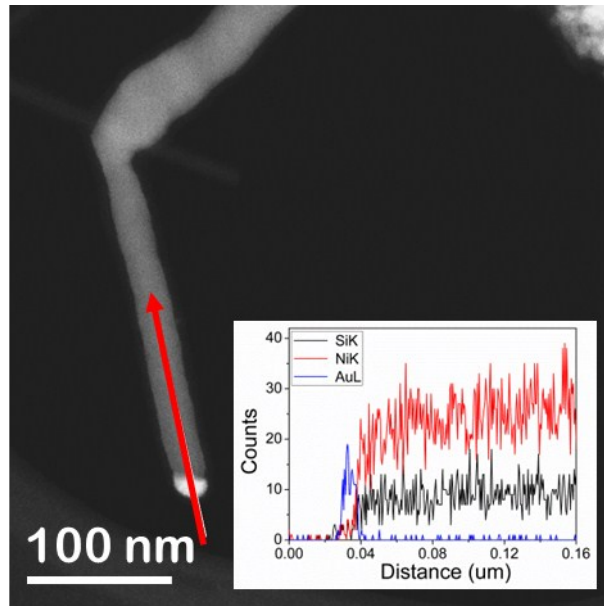


Figure S3: Additional STEM image and EDX line profile of complete Ni_2Si NW