Electronic Supplementary Material (ESI) for CrystEngComm.
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Supporting information

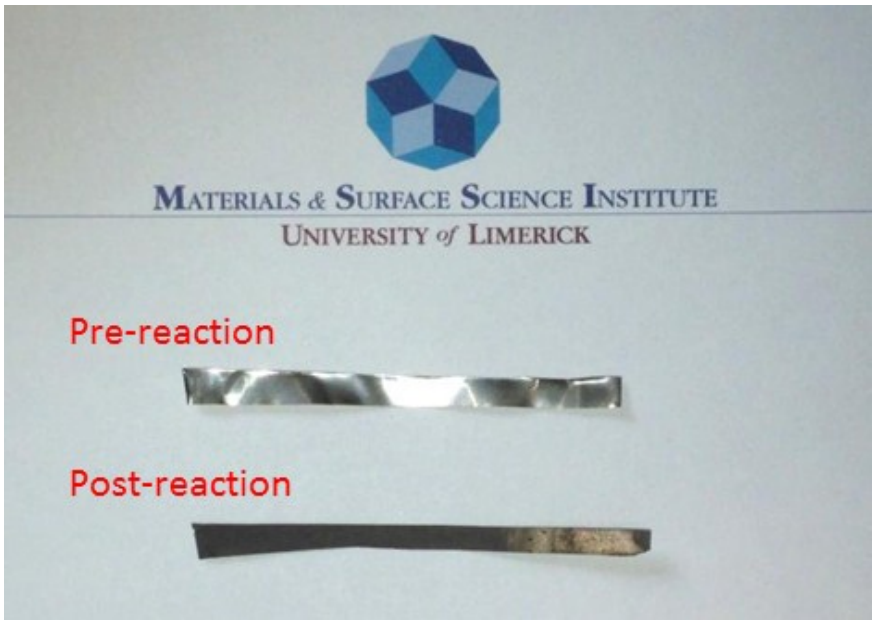


Fig S1. Photograph of Ni substrate before and after reaction.

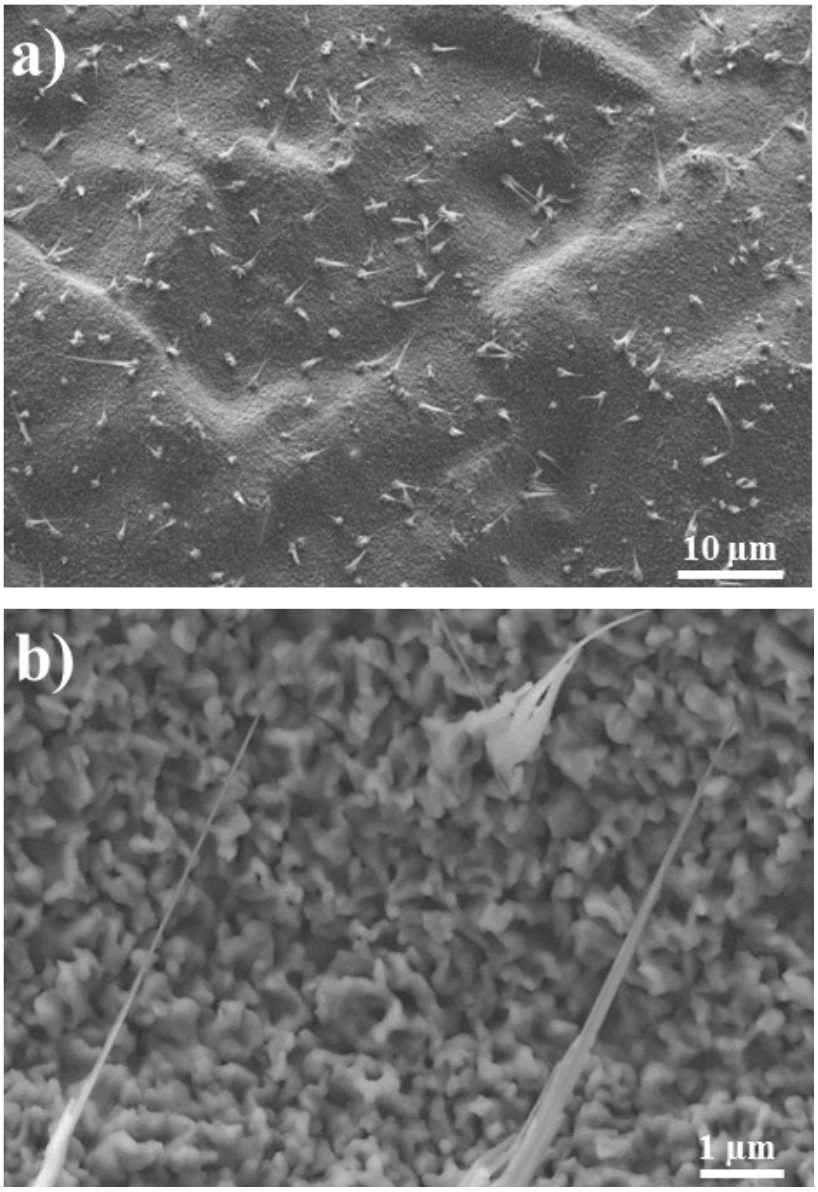


Fig S2. a) Low magnification SEM image of substrate post reaction. b) High magnification SEM image showing morphology of NWs.

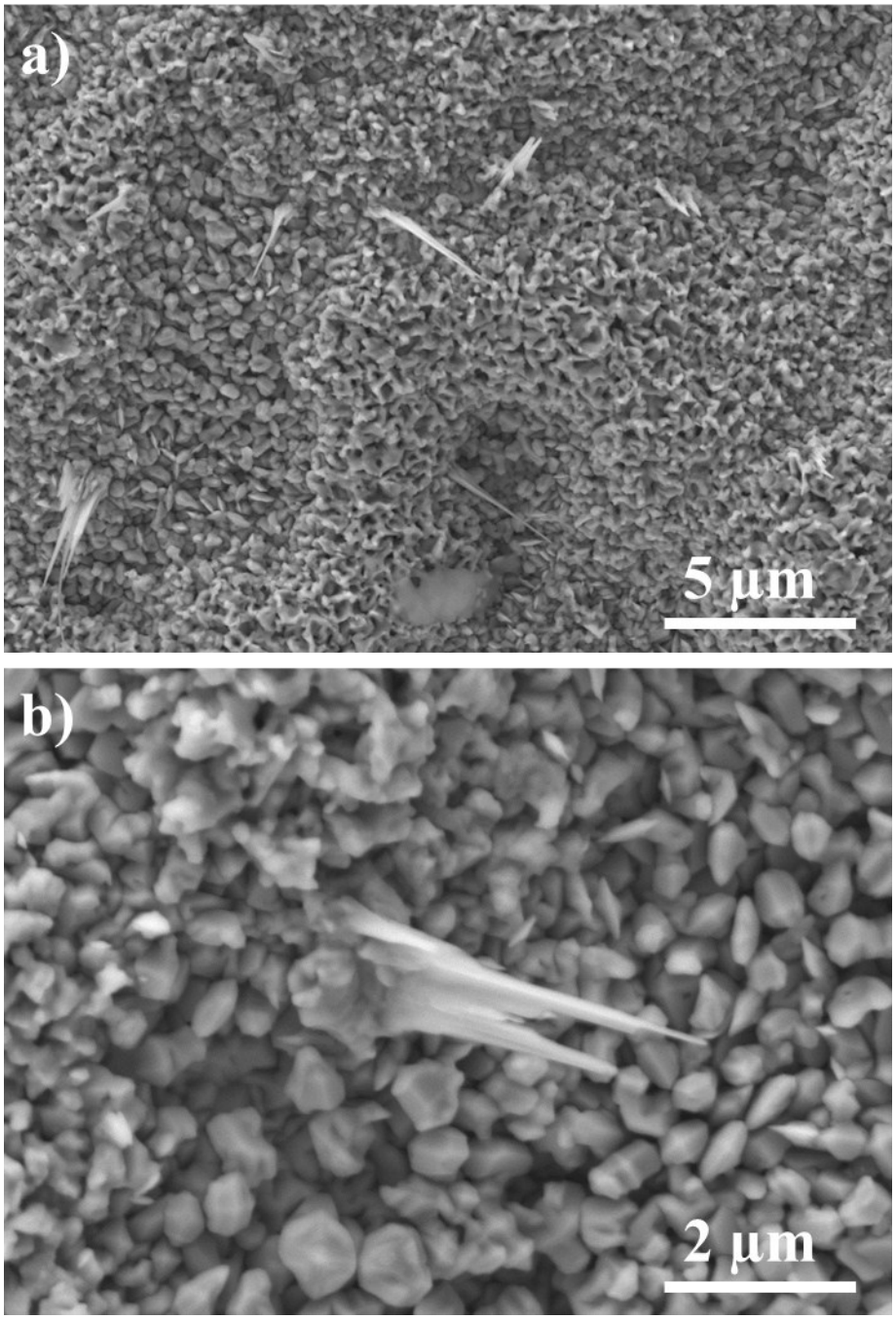


Fig S3. a) and b) show SEM images of a NiGe NW synthesis with 0.5 ml DPG precursor used. No increase in NW yield was observed despite the increase of Ge precursor used.

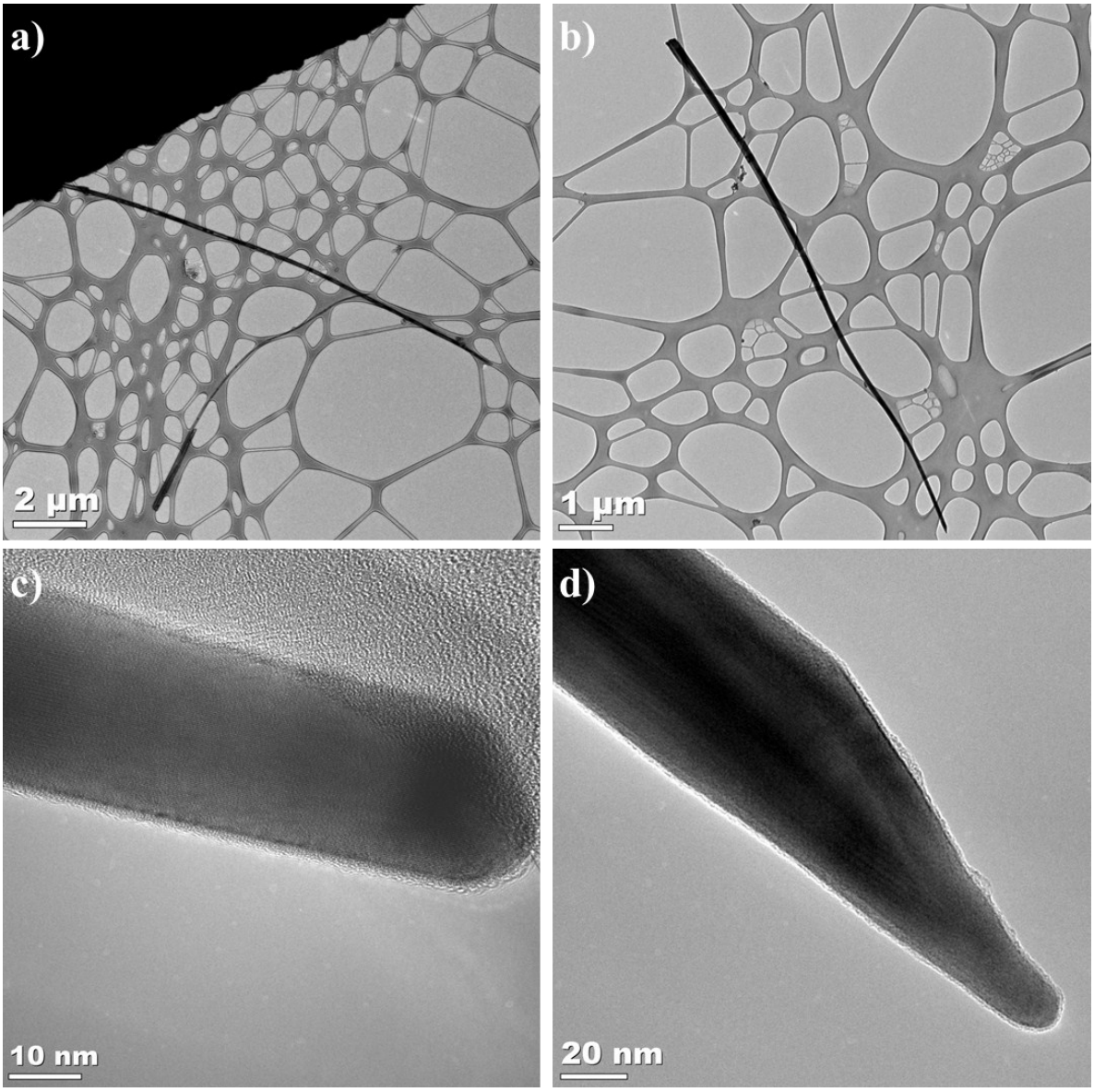


Fig S4. Additional TEM images of NiGe NWs; (a) and (b) show low mag images of NiGe NWs greater than 10 µm in length, (c) and (d) show tips of NiGe NWs

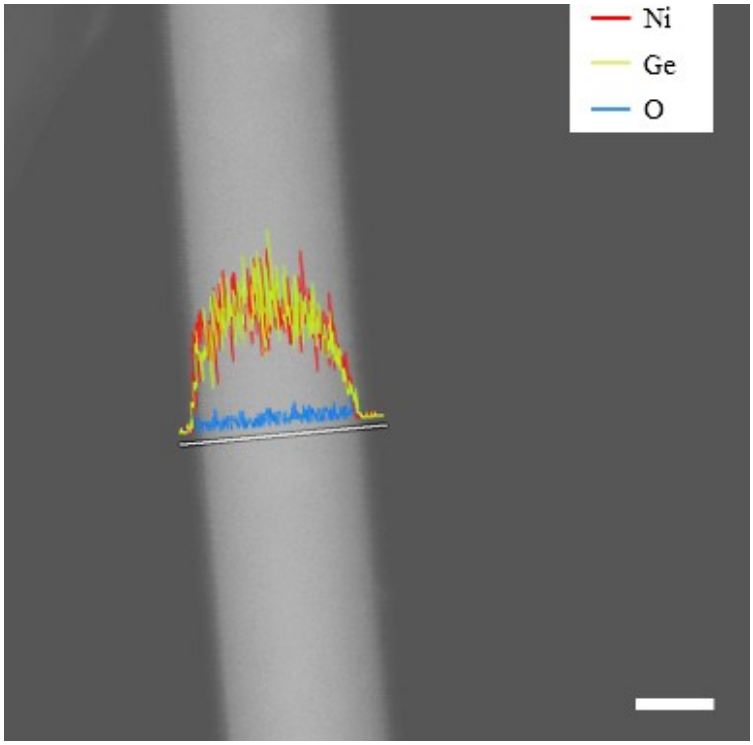


Fig S5. DF-STEM image with overlapping EDS line showing the presence of oxygen in amorphous region (Scale bar = 20 nm).

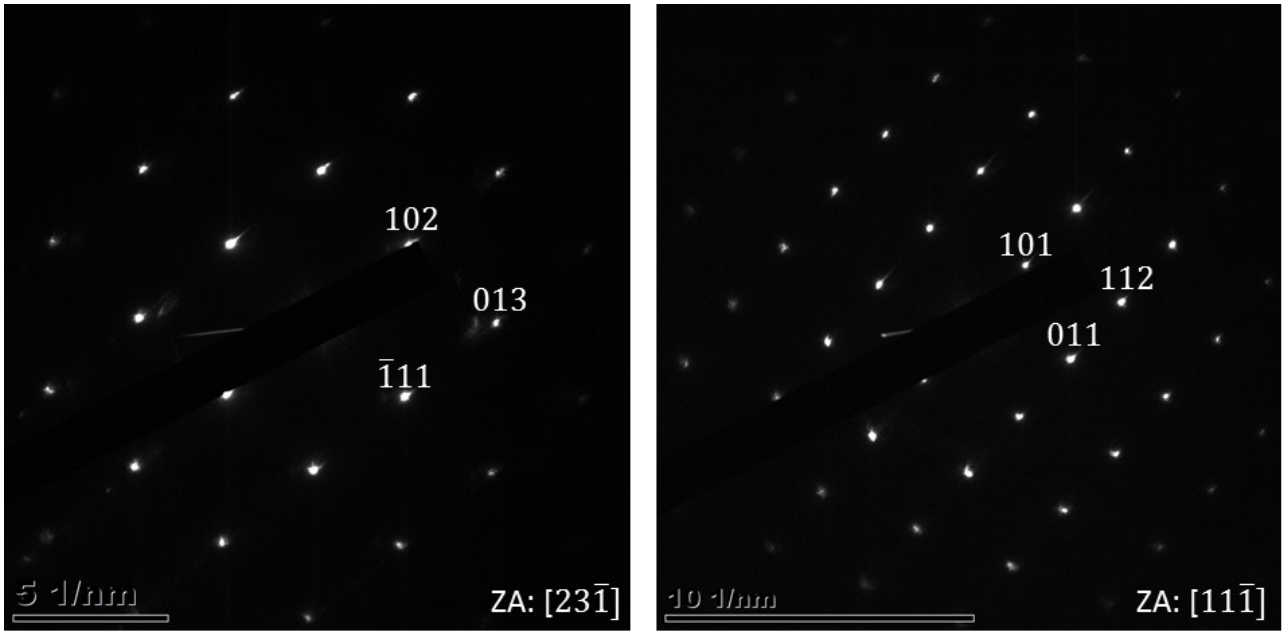


Fig S6. Additional electron diffraction patterns taken from different zone axes.

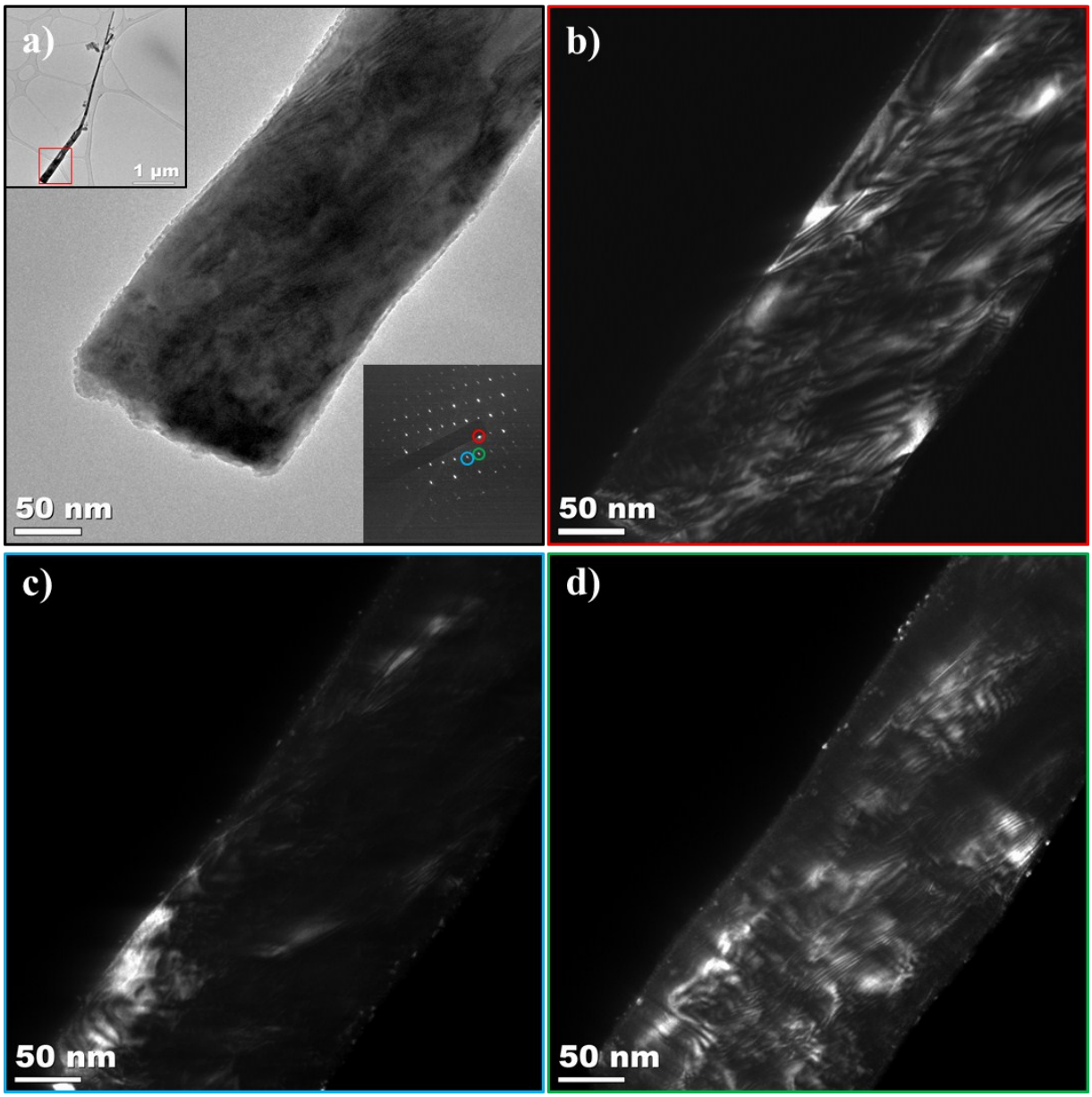


Fig S7. TEM images displaying high defect concentration at NW base; (a) bright field TEM image of NW base with low magnification image and corresponding electron diffraction pattern inset, (b), (c) and (d) show dark-field TEM images relating to the highlighted spots in the electron diffraction pattern shown inset in (a).

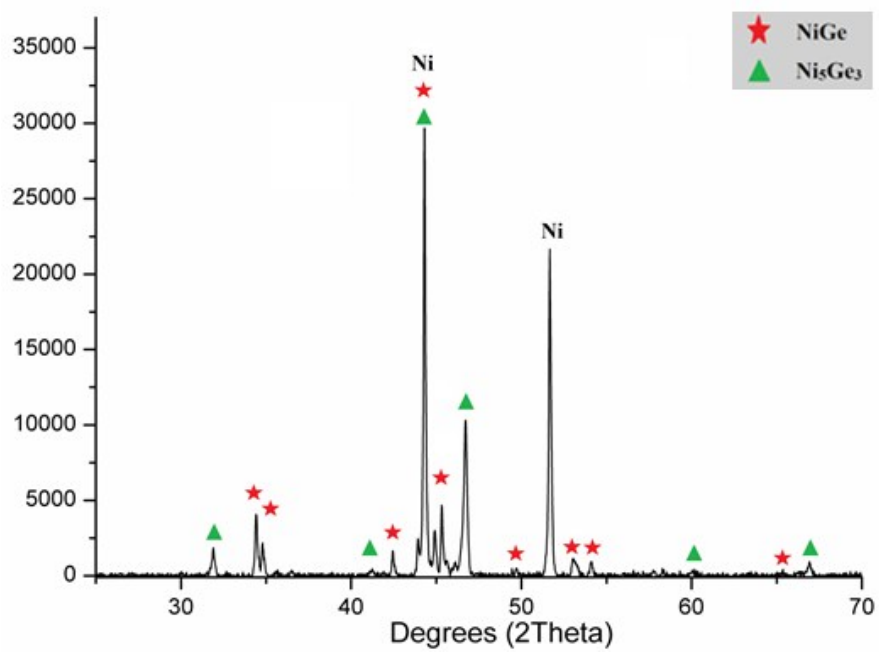
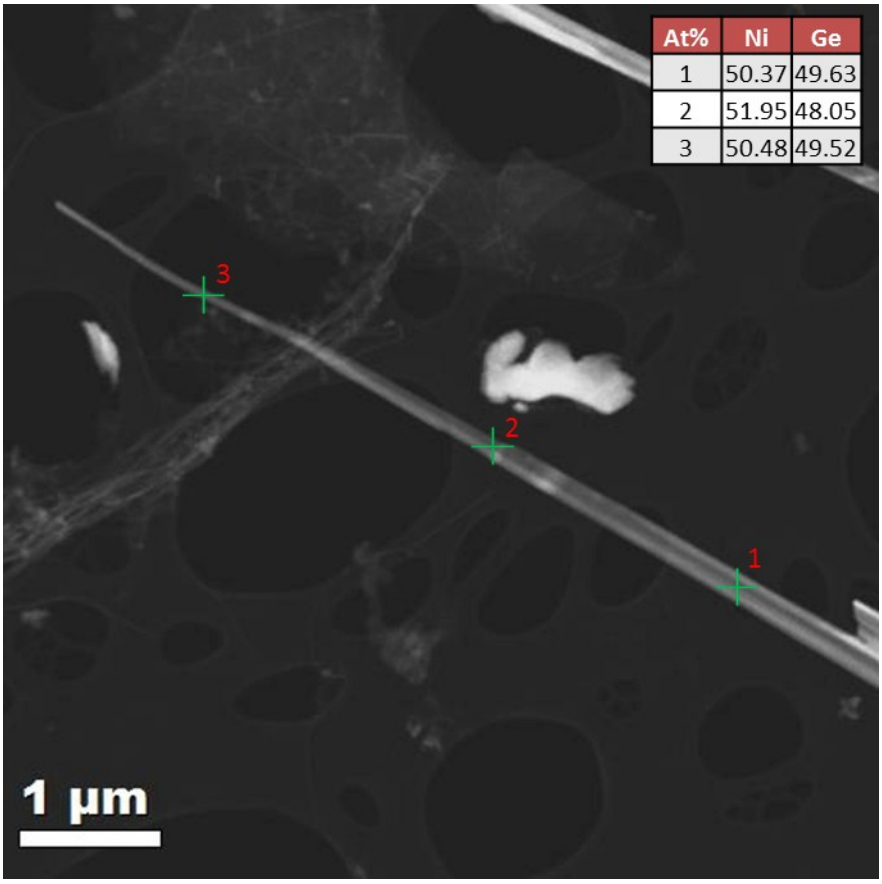


Fig S8. XRD pattern taken from Ni substrate after a 45 min reaction time with the marked reflections corresponding to NiGe, Ni_5Ge_3 and Ni.



At%	Ni	Ge
1	50.37	49.63
2	51.95	48.05
3	50.48	49.52

Fig S9. DF-STEM image of NiGe NW formed after 120 min reaction with EDS spot analysis

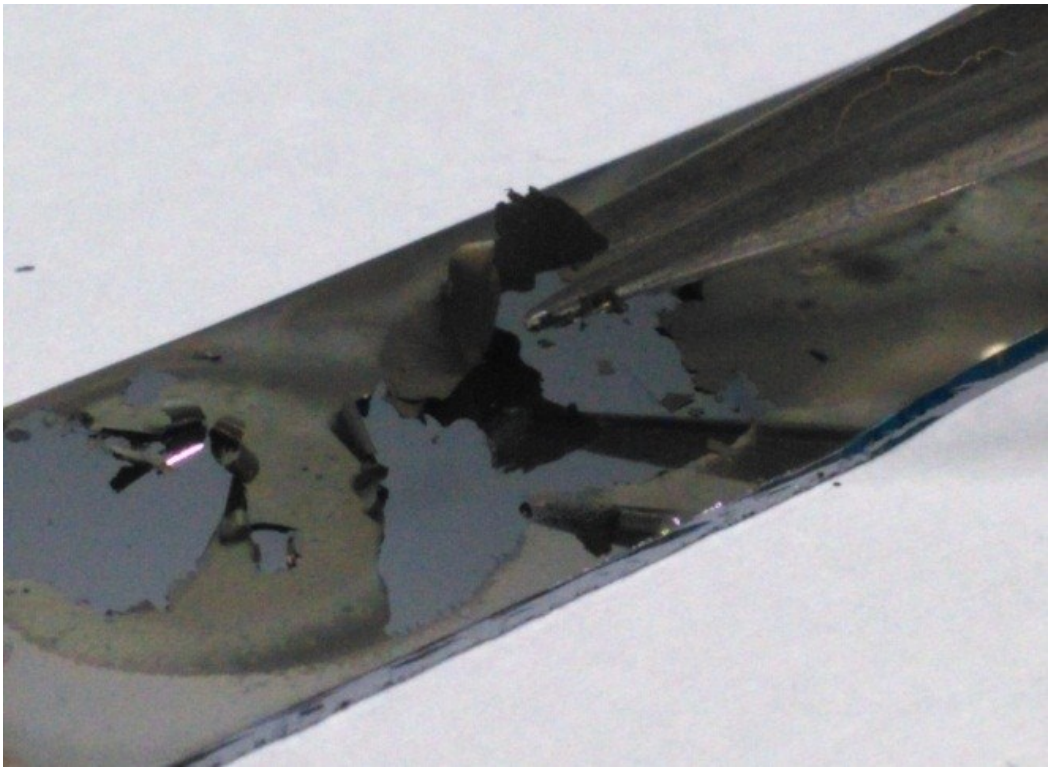


Fig S10. Photograph of NW coated substrate after reaction. Mats of NWs can easily be removed from substrate using tweezers.

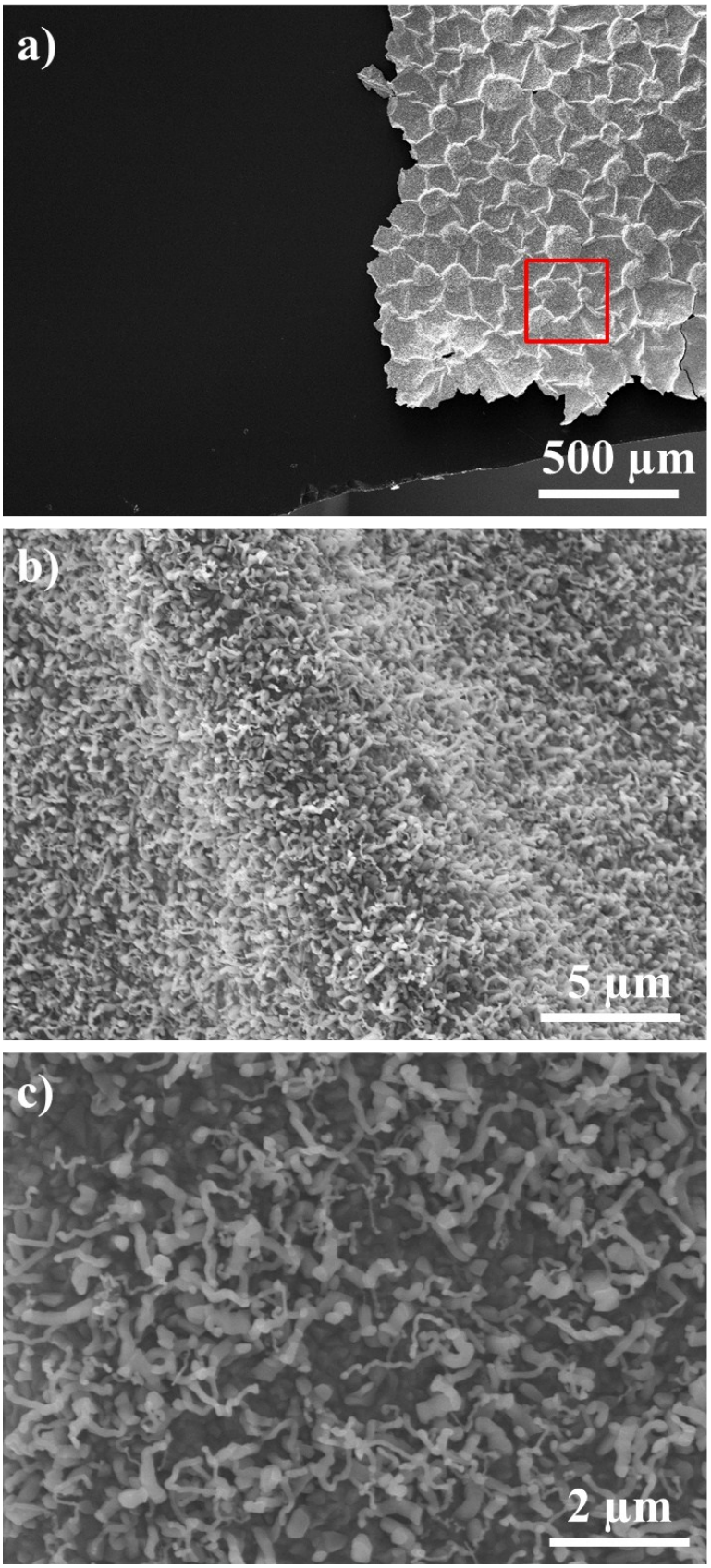


Fig S11. a) Low magnification SEM image showing NiGe seeded Ge growth across from a 100 nm Ni thin film, flaking from the substrate can be seen b) Low magnification SEM image of highlighted area in a). c) Higher magnification image of the dense mesh of Ge NWs.

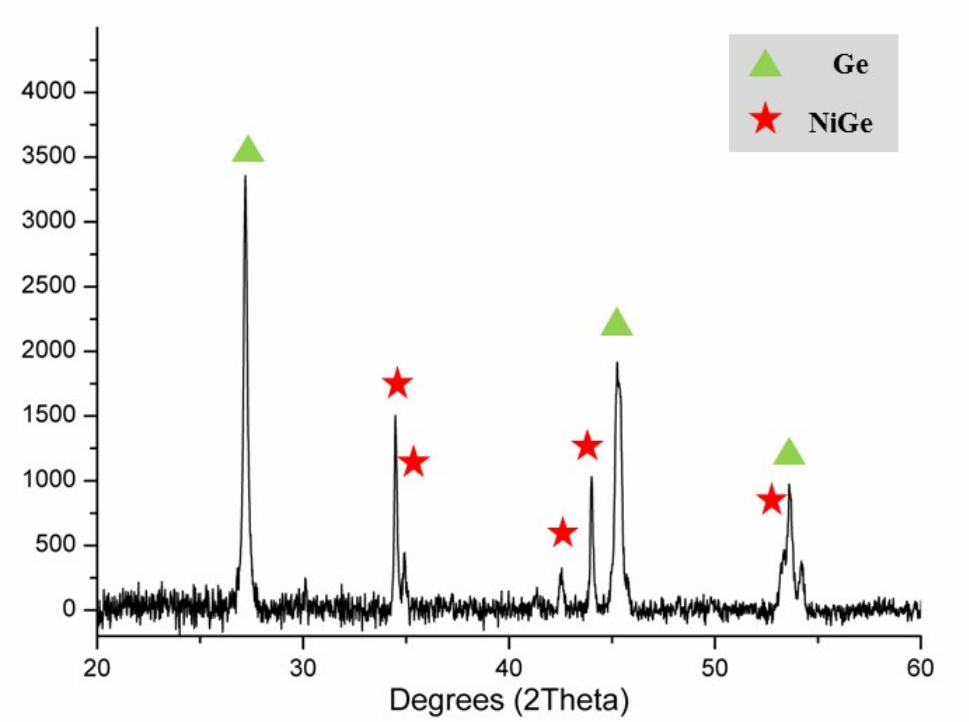


Fig S12. XRD pattern of NiGe seeded Ge NWs using a 100 nm thick Ni film.

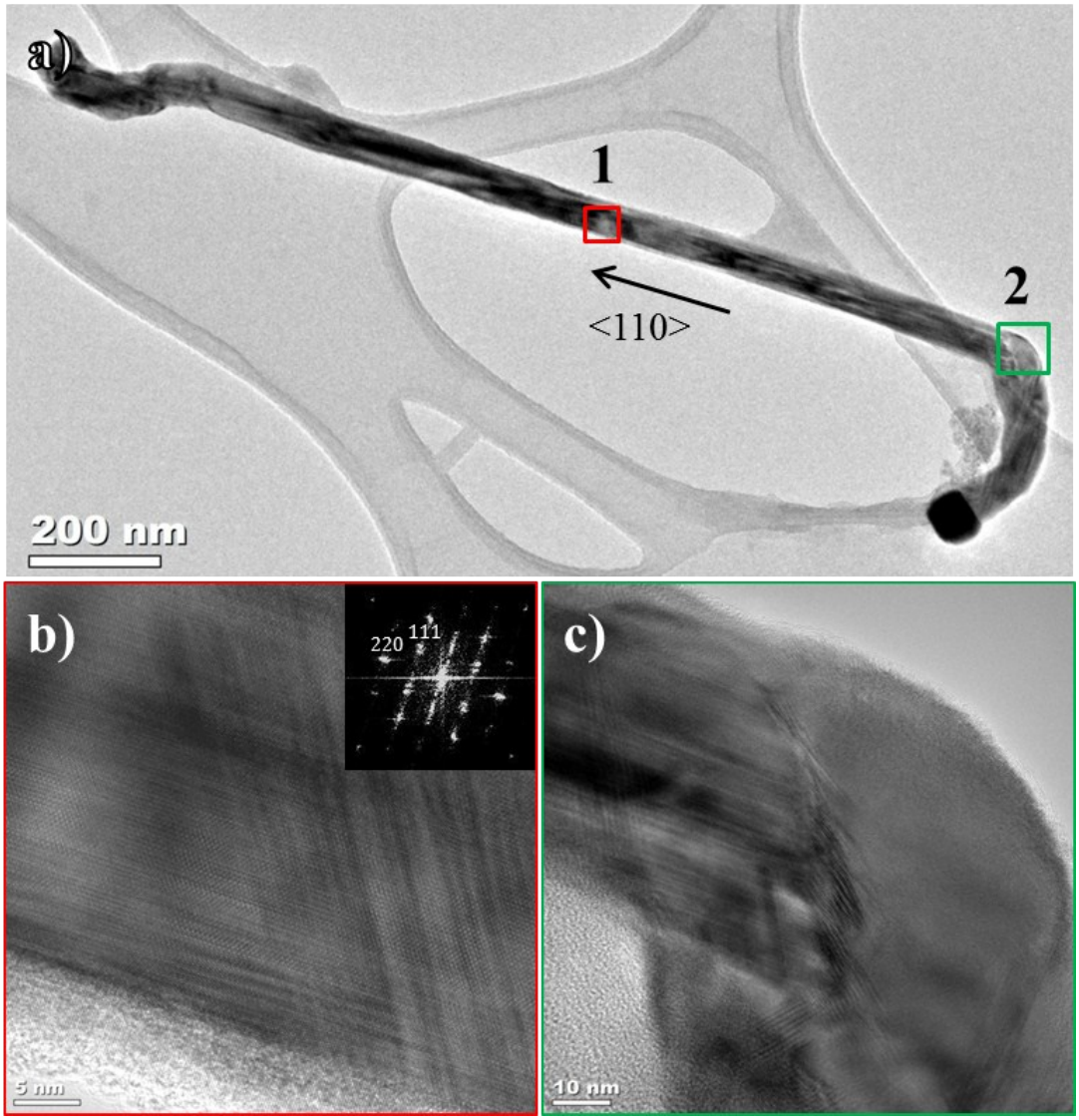


Fig S13. a) Low magnification TEM image of NiGe seeded Ge NW. b) High magnification TEM image of area 1 in a) with indexed FFT inset. Double spots in FFT indicate the presence of twinning. c) High magnification image of area 2 in a). A high concentration of defects can be seen as the NW begins to kink.