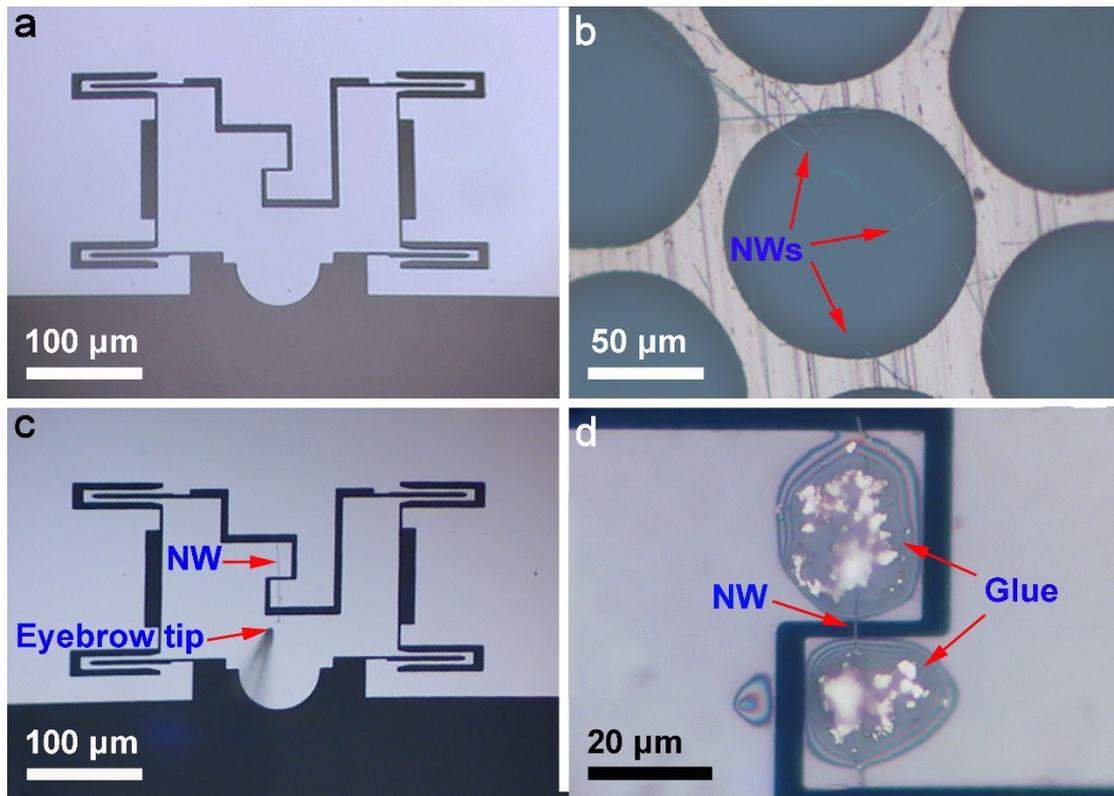
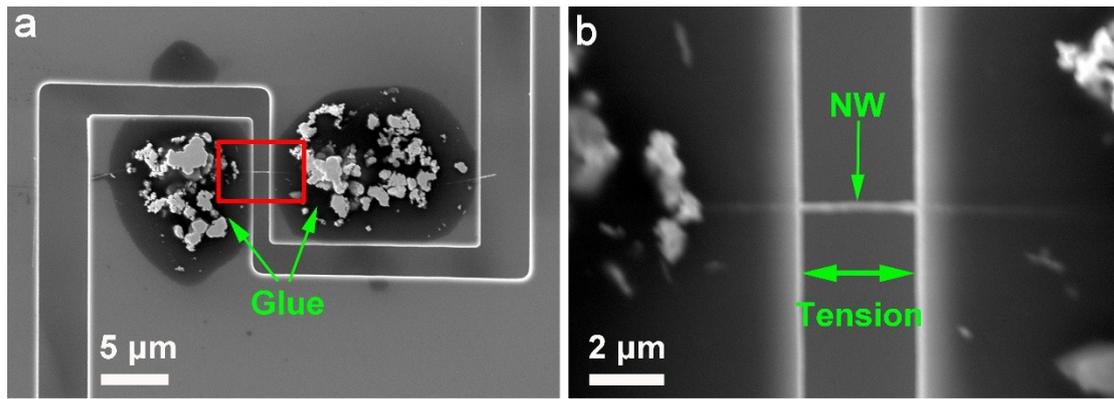


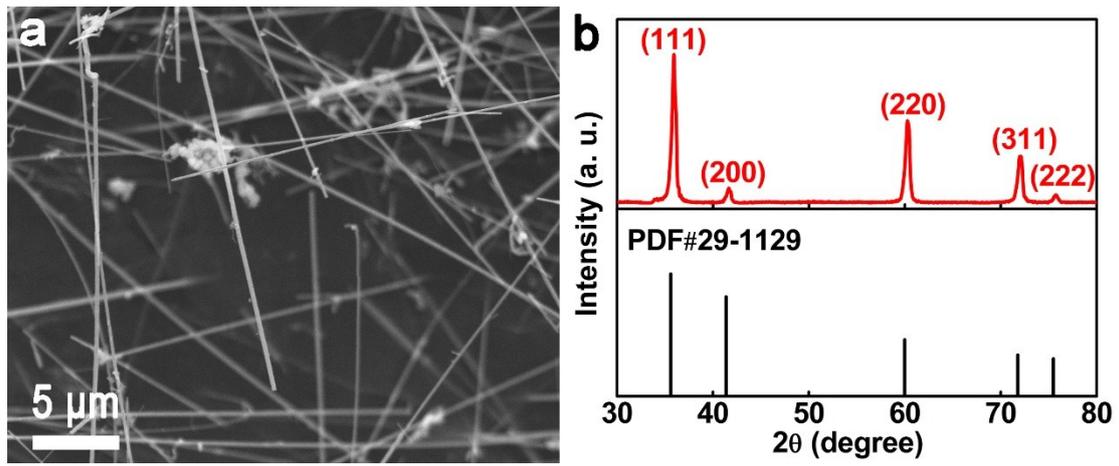
Extended Data Figure 1 (a) Photograph of an optical (left) and metallurgical (right) microscopes and (b) schematic diagram of an eyebrow fixed on a needle connecting plastics and a glass block marked by the red rectangle in (a).



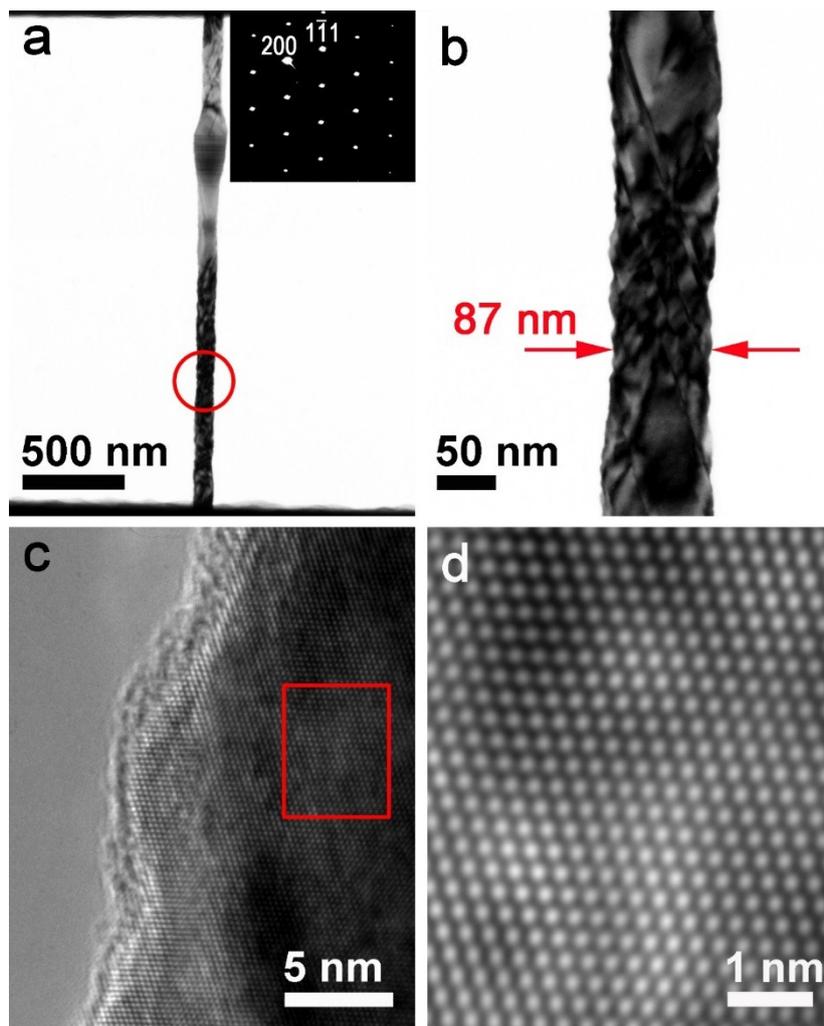
Extended Data Figure 2 Optical images of (a) a PTP device, (b) NWs on a Cu grid, (c) a NW and eyebrow tip on a PTP device and (d) a NW fixed on a PTP device by conductive Ag epoxy glue.



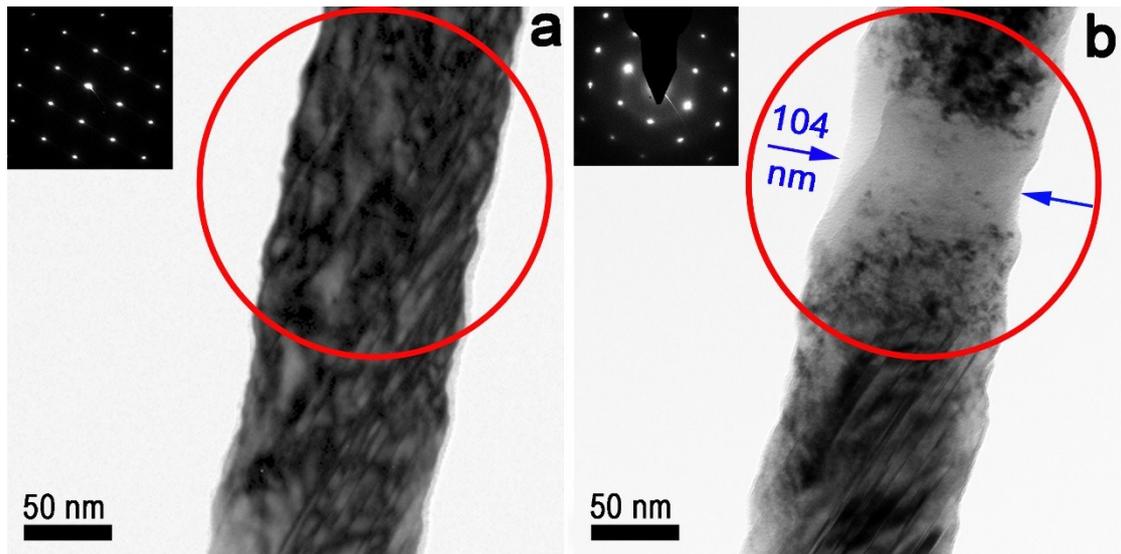
Extended Data Figure 3 SEM images of a NW fixed by conductive Ag epoxy glue (a) at low magnification and (b) enlarged area marked by the red rectangle in (a).



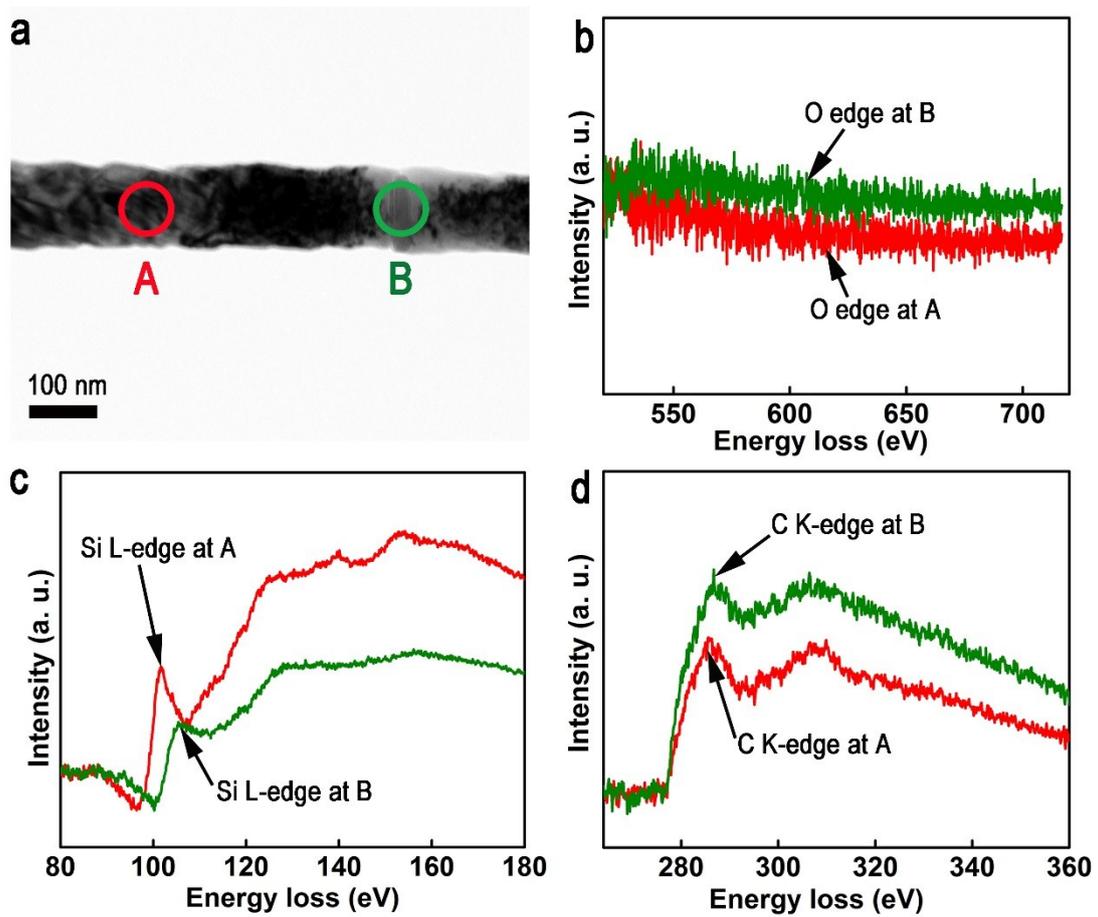
Extended Data Figure 4 (a) SEM image of NWs and (b) its corresponding XRD pattern.



Extended Data Figure 5 TEM images of a NW used for in situ TEM tensile testing at (a) low and high (c) magnifications. (b) and (d) show the enlarged area marked by the red circle and rectangle in (a) and (c), respectively.



Extended Data Figure 6 TEM images prior to (a) and after (b) electron beam irradiation at a current density of 7.457 A/cm^2 for 60 min. Inset shows the corresponding SAED pattern marked by the red circle.



Extended Data Figure 7 (a) TEM image after unloading of the 3rd test in Fig. 51 and its corresponding EELS of (b) O, (c) Si and (d) C elements at two different locations A and B as marked in (a).

Extended Data Table 1 Elastic modulus and fracture strength of SiC NWs measured by in situ

Nanowire		3C-SiC single crystal		Amorphous SiC				
In situ	TEM	tensile	testing	1 st	2 nd	1 st	2 nd	3 rd
(fracture)								
Elastic modulus (GPa)				473.8	324.9	323.1	301.4	234.3
Fracture strength (GPa)				13.4	1.7	10.0	6.7	5.5
TEM tensile testing.								