Supplementary Information

Real-time observations of TRIP-induced ultrahigh strain hardening in a dual-phase CrMnFeCoNi high-entropy alloy

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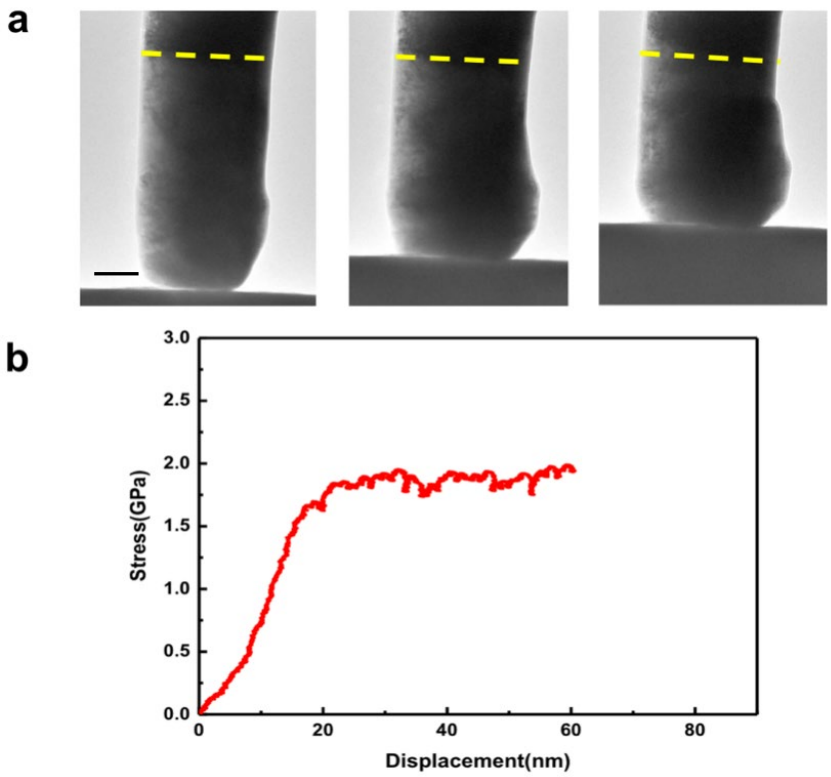
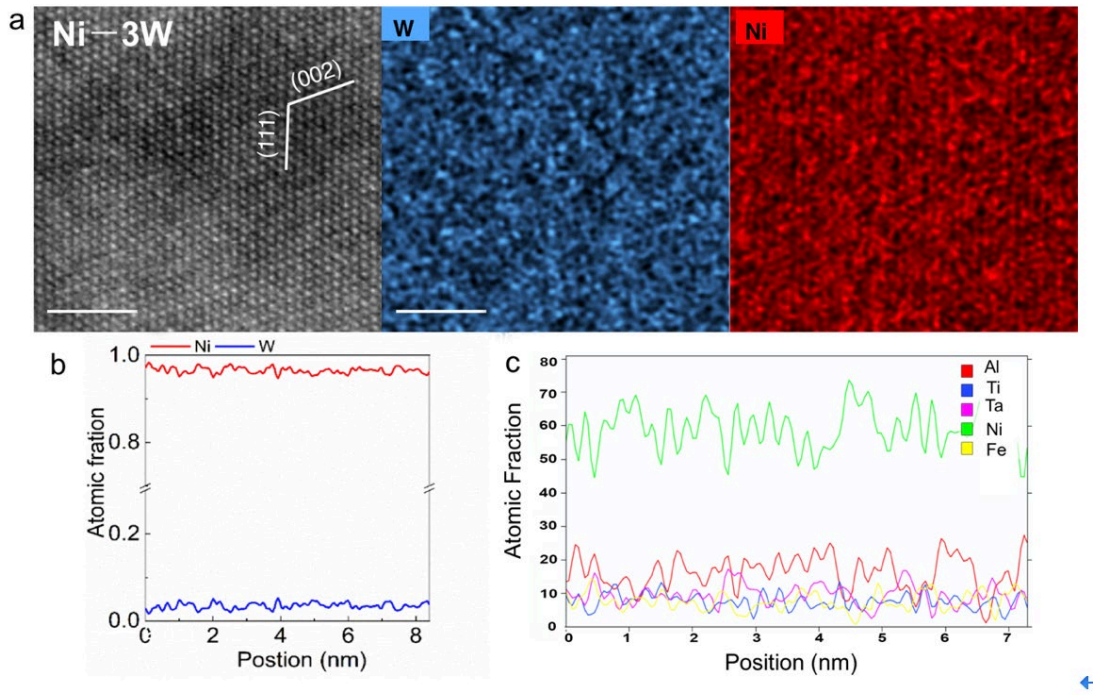


Supplementary Fig. 1. ***In situ*** **TEM compression tests on a pillar with the** ***fcc/hcp*** **dual-phase structure, where the** ***fcc/hcp*** **phase boundary was almost perpendicular to the loading direction.** There was no increase in the volume of the *hcp* phase. **a** TEM images captured from Supplementary Movie 5 of the DP HEA pillar (scale bar, 100 nm). **b** Engineering stress-displacement curve of the DP HEA pillar.



Supplementary Fig. 2. EDS mapping and concentration fluctuations analysis in a Ni-3W alloy and a Ni-based complex superalloy. **a** EDS maps of Ni and W in a Ni-3W alloy. Scale bars represent 2 nm. **b** Typical line profile of the concentration fluctuations along [002] in the Ni-3W alloy. **c** Typical line profile of the concentration fluctuations along [002] in a Ni-based complex superalloy. The fluctuation of element concentrations is far higher compared to that in Ni-3W.