SUPPLEMENTARY MATERIAL

Mechanical behavior of InP twinning superlattice nanowires

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Fig. S1. 1 - 8: Tensile sample preparation of TSL InP nanowires, and 9 - 11: \textit{In situ} mechanical testing of nanowires in a transmission electron microscope (TEM).
Video S1. The in-situ TEM mechanical testing of TSL InP nanowires.

Video S2. Molecular dynamics simulation of the tensile deformation and fracture of InP TSL nanowires.

Figure S2. Molecular dynamics calculation results of the tensile stress-strain curves of the untwinned InP nanowires as a function of the nanowire diameter at 300K.

Figure S3. Molecular dynamics calculation results of the tensile stress-strain curves of the twinned InP nanowires as a function of the ratio between the diameter $D$ and the twin spacing $l$ at 300K.