

# Twisting of a Pristine $\alpha$ -Fe Nanowire: From Wild Dislocation Avalanches to Mild Local Amorphization

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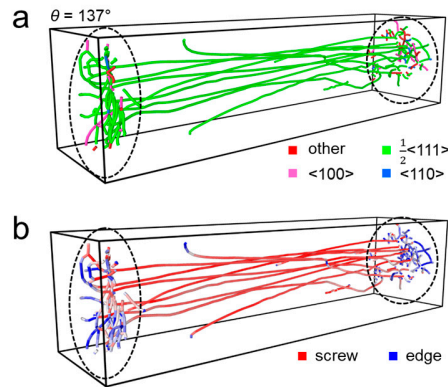


Figure S1. Dislocation structure characteristic analysis at  $\theta = 137^\circ$ . (a). Burgers vectors and (b) dislocation types are analyzed by the Dislocation Extraction Algorithm (DXA) in the structural visualization package OVITO [28, 29]. The dashed circles indicate the dislocation wall near the loading end.

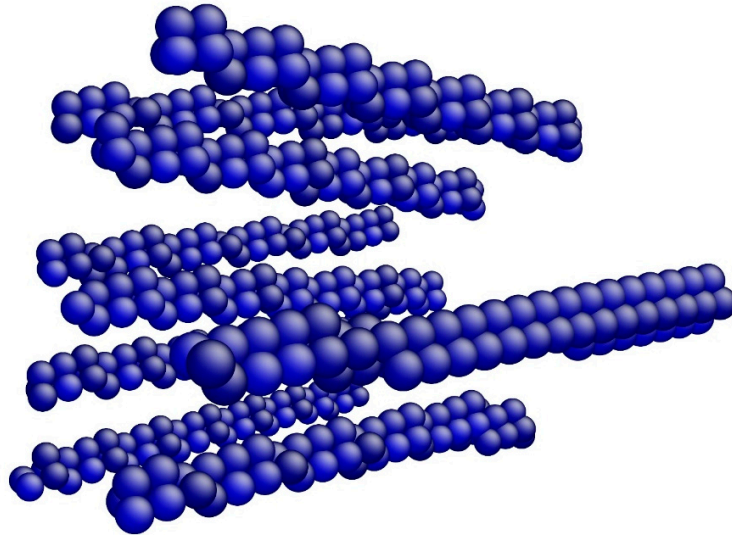


Figure S2. Atomic dislocation-core structure at  $\theta = 137^\circ$ .

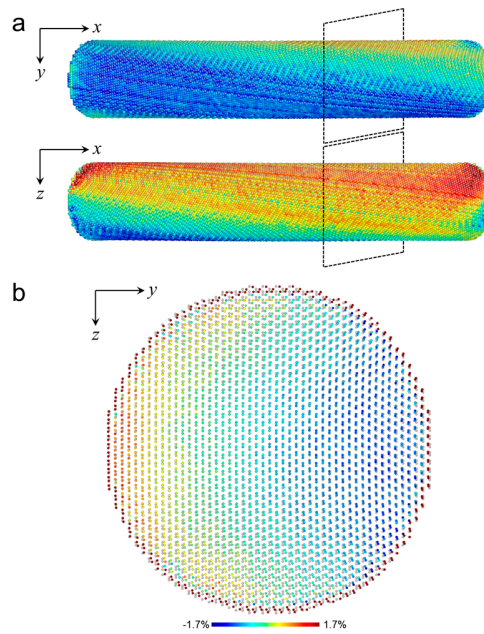


Figure S3. Atomic volume increment at  $\theta = 76.5^\circ$ . The grey atoms are at  $\theta = 0^\circ$  and the color atoms are at  $\theta = 76^\circ$ . They are colored by the voronoi volume change.