Supporting information

Impact-resistant carbon nanotube woven films: A molecular dynamics study

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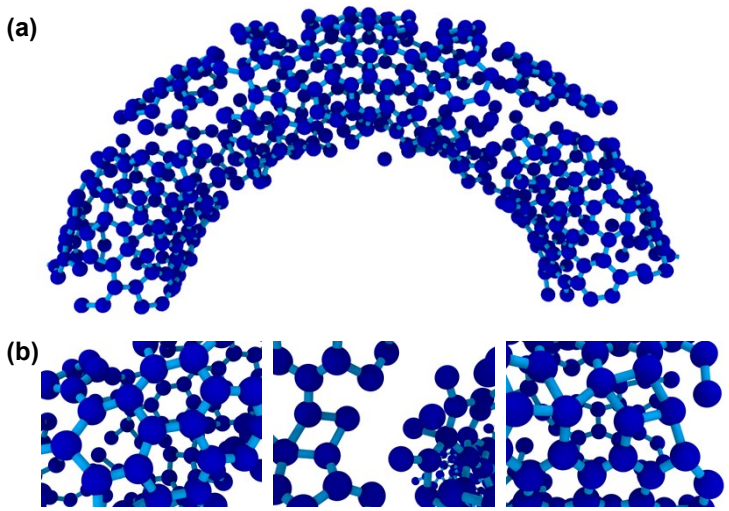

Figure S1. (a) The unstable configuration of SWCNT under large bending angle. (b) Enlarged figures for local fracture failure.

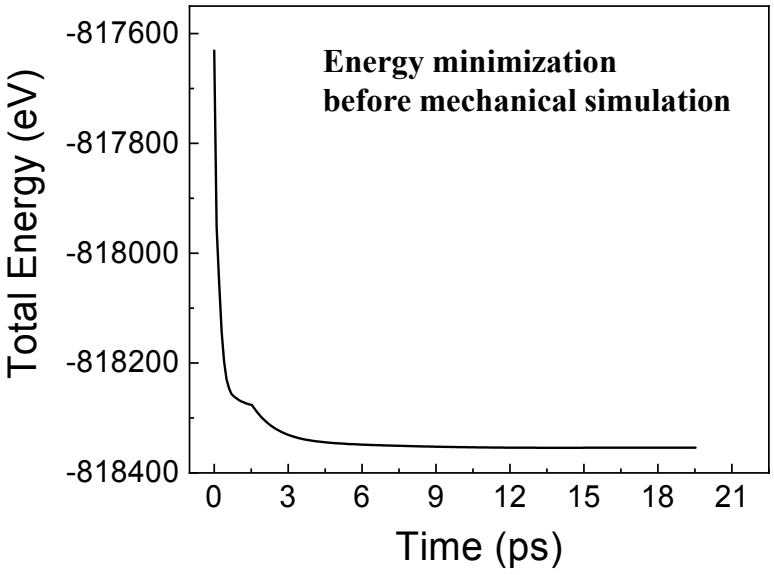

Figure S2. The energy minimization curve of SWFs before tensile and impacting tests.

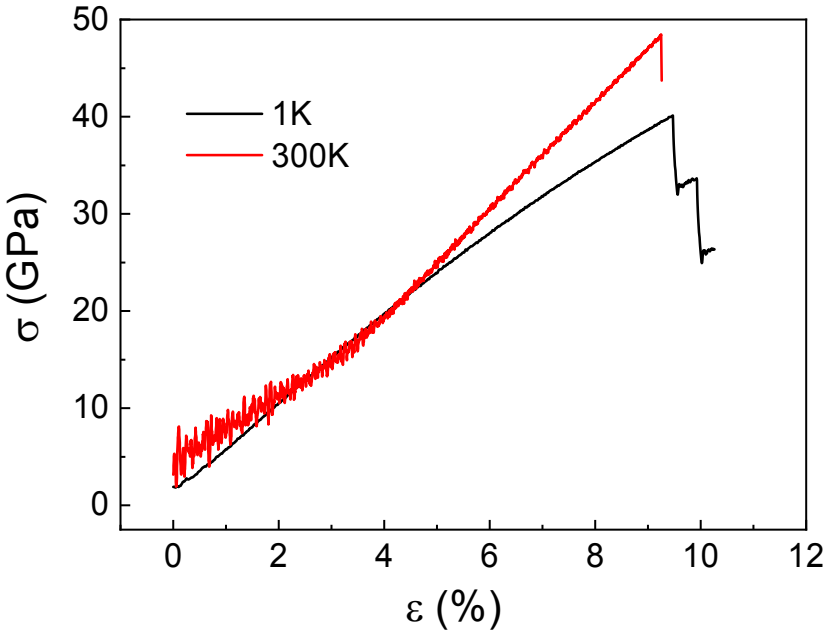

Figure S3. Tensile stress-strain curves of SWFs with θ=15° at T=1K and T=300K, respectively.

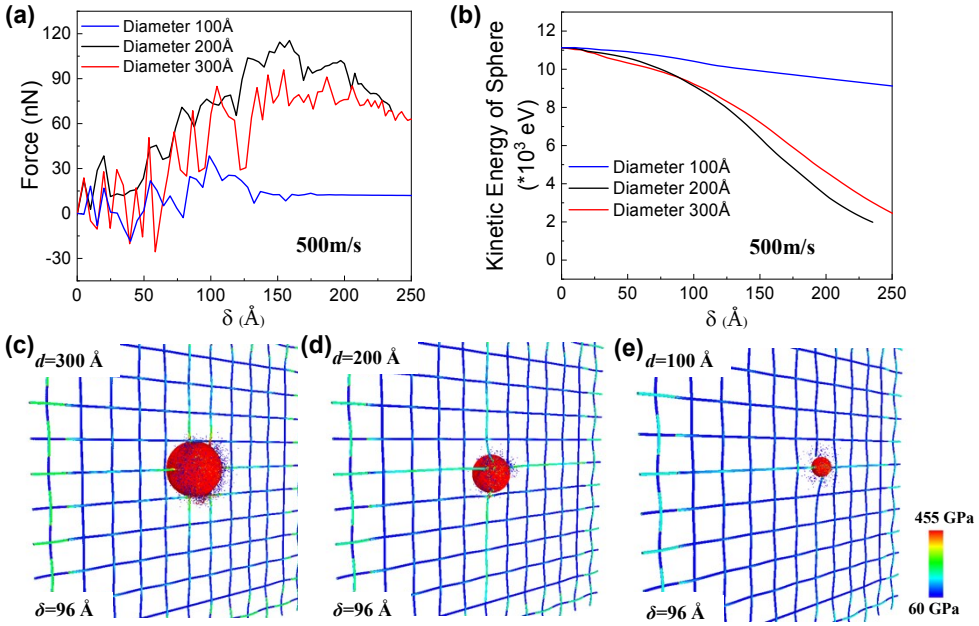

Figure S4. (a) The force F-displacement δ of projectile acting on SWFs with different diameters at v_i=500m/s. (b) Kinetic energy dissipation of the projectile with different diameters at v_i=500m/s during the impact process. (c-e) The impacting snapshots of projectile with D=100 Å, 200 Å and 300 Å at δ=96 Å.

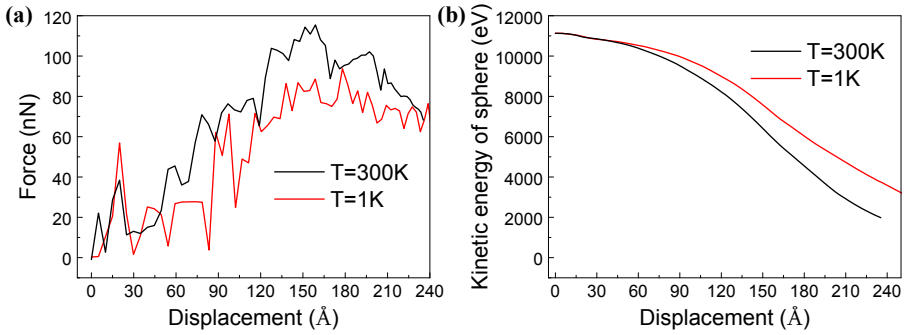

Figure S5. (a) The force F-displacement δ of SP acting on single-layer SWFs with T=1K and 300K at v_i=500m/s. (b) Kinetic energy dissipation of the SP with T=1K and 300K at v_i=500m/s during the impact process.