

Supplementary Informations

Figure S1. (a) Schematic of the specially designed two-stage light gas gun (LGG) at Rice University used for hypervelocity impact (HVI). The individual parts are marked in the figure. Burning of powder charge propels the piston in the pump tube. This compresses hydrogen gas forces it through launch tube via high-pressure-coupling. (b) Schematic of the target configuration for the HVI experiment of spherical CNTs.

Figure S2. Snapshot of lateral projection of the horizontal collision of CNT at different time during impact showing the process that shows unzipping process and defect generations. The detail video of the process is added with the manuscript.

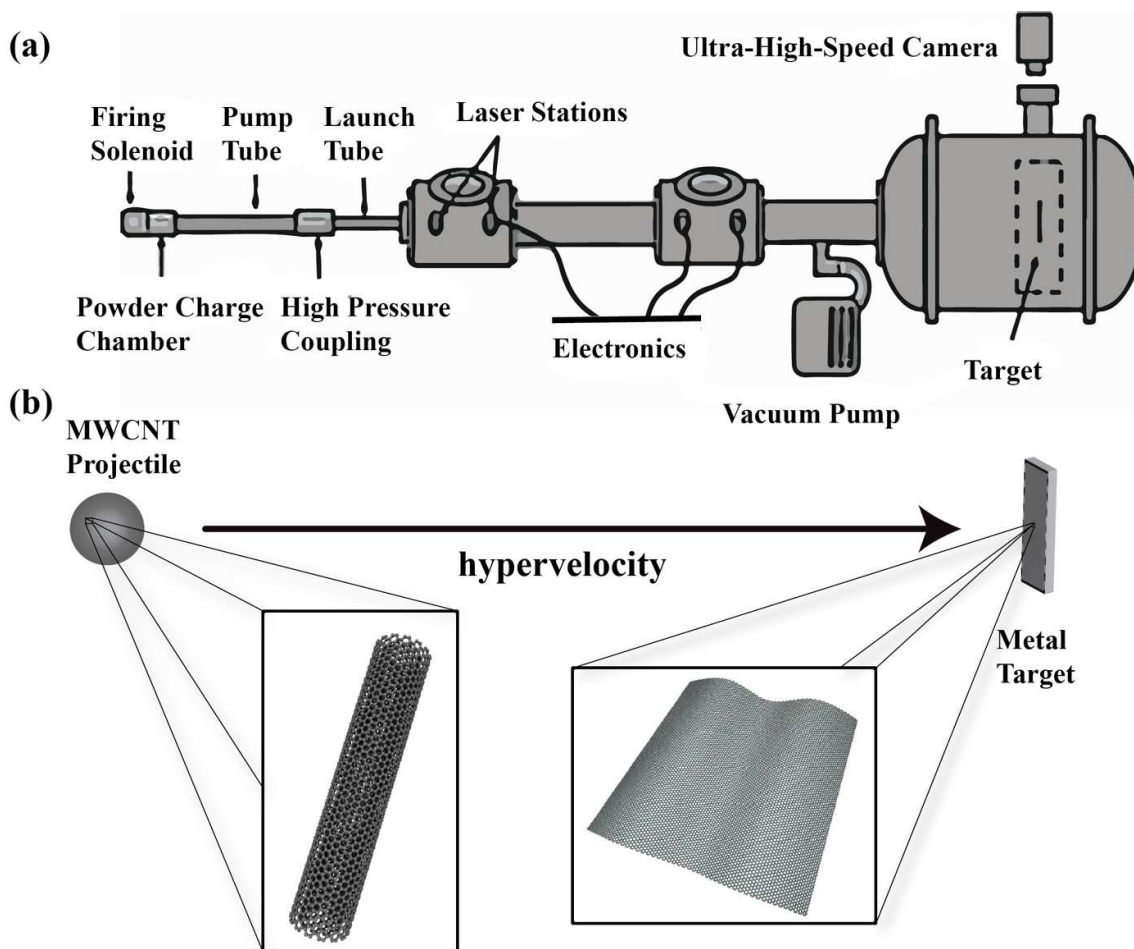


Figure S1.

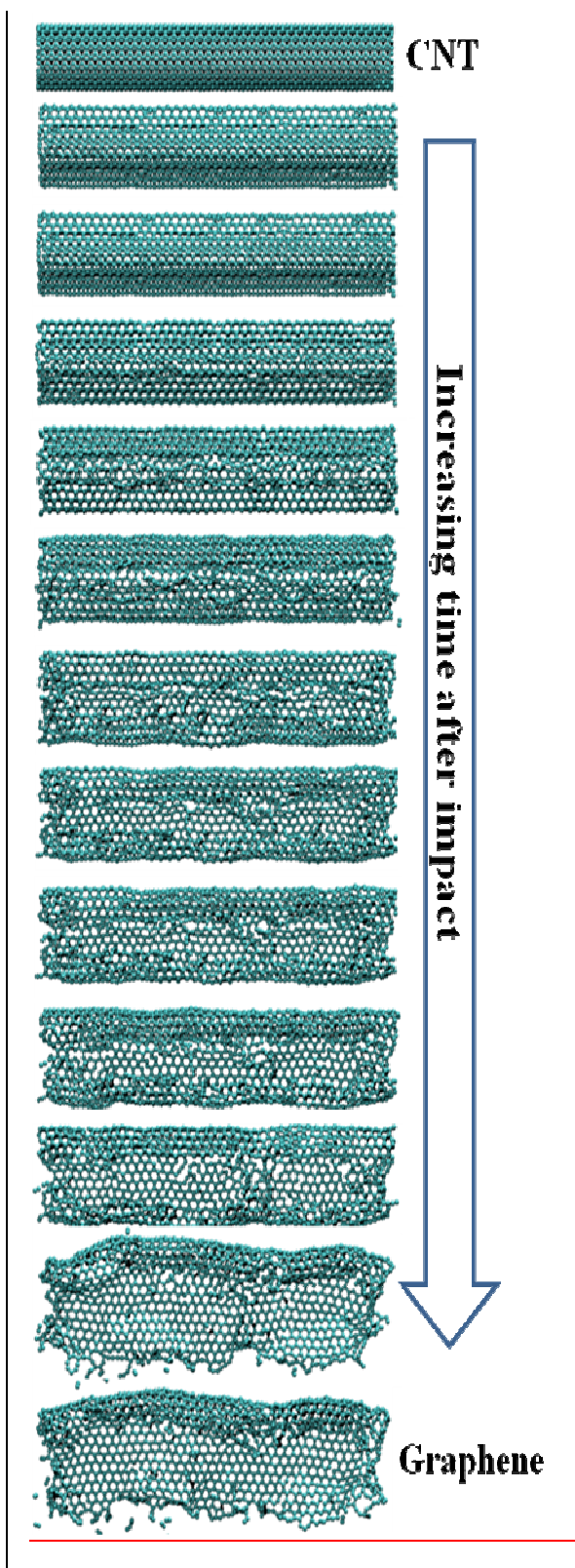


Figure S2.