

SURFACE DEPOSITION AND DEFORMATION OF CARBON NANOTUBE VIA COLLISION

J. Jang and L.C. Saha

Department of Nanomaterials Engineering, Pusan National University, Miryang, 627-706, Republic of Korea

We investigated the deformation of a carbon nanotube (CNT) deposited on a silicon surface via supersonic collision. By using molecular dynamics method, we simulated the CNT colliding along its axis by varying the incidence angle (fig. 1). The CNT aligns vertically by reorienting its axis up to 75° provided the tube end contacts the surface upon impact. The sputtering of silicon atoms and extensive fragmentation of the CNT occur for a high energy collision. Comprehensive analysis on the collision dynamics of CNT was performed. The CNT relaxes its structure within 1 ps but its energy relaxation takes almost 10 ps.

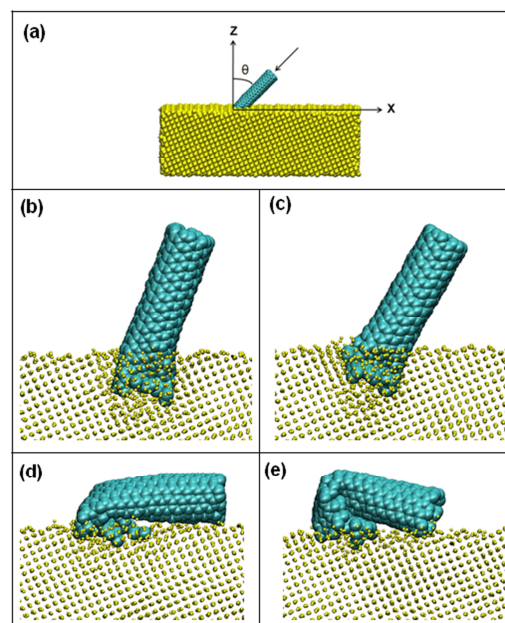


Fig. 1